Publishing INASED

Educational Policy Analysis and Strategic Research

1949 - 4289

EPASR
INASED Published ©

Volume 17 Issue 1 March, 2022

epasr.inased.org

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EPASAD

Educational Policy Analysis and Strategic Research

Volume 17 Issue 1 March, 2022

INASED
International Organization

A Journal Sponsored by International Association of Educators (INASED)

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EDUCATIONAL POLICY ANALYSIS AND STRATEGIC RESEARCH

Indexing/Abstracting:

1- ERIC: http://www.eric.ed.gov/

2- ERIH PLUS: https://dbh.nsd.uib.no/publiseringskanaler/erihplus/

3- EBSCO Publication: http://www.ebsco.com

4- Directory of Open Access Journals: (DOAJ): http://www.doaj.org/home

5- Cabell's Directory of Publishing: http://www.cabells.com

6- OCLC-WorldCat: http://www.oclc.org/worldcat/default.htm

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A Qualitative Analysis of Self-Determination and Psychological Adjustment of Syrian Refugees in Turkey: Teachers' Perspective

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Abstract

This qualitative research explored Syrian refugees' self-determination and psychosocial adjustment in Turkey and teachers' experience working with refugees. Data were collected through semi-structured interviews from 12 vocational and language teachers (M_{age} = 34.27, SD_{age} = 4.94) who had an average of 9.58-year teaching experience and at least one year of teaching Syrian forcibly displaced people and refugees. The content analysis revealed three overarching themes: i) the needs for autonomy, competence and relatedness facilitate refugees' adjustment in dealing with resettlement stressors; ii) trauma experience interferes with refugees' adjustment; iii) working with refugees transforms teachers to become more tolerant, resilient, patriotic, sensitive to diversity, and grateful for their relationships. The findings may stimulate psychosocial interventions and policies that would mitigate contextual barriers as well as create an inclusive psychosocial environment. Refugees are likely to benefit from a nurturing environment and teachers are likely to benefit from trainings focusing on trauma informed teaching skills.

Keywords: Syrian refugees, teachers, psychological adjustment, self-determination, trauma

DOI: 10.29329/epasr.2022.248.1

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Introduction

Out of the Arab Spring a resistance erupted against Asad and his Syrian regime in March 2011 (Sharara & Kanj, 2014), which created one of the biggest refugee crises of our day. Since then, the Syrian civil war has ravaged the country without a foreseeable peace in the near future. Approximately 6 million people fled the country, more than 6 million Syrians internally displaced, and 3 million are in besieged areas (UNCHR, 2020). According to the UNCHR report, Turkey is hosting the largest number of Syrians: Nearly 4 million Syrian children, adolescents and adults fled to Turkey, a majority of them live in urban areas while a small number of Syrian refugees live in camps. The crisis continues to be a substantial concern with a potential threat to uproot more Syrians. However, the Syrian refugee crisis is not an isolated event. Worldwide, over 70 million people fled their country of origin and millions of people do not have access to basic human rights in their country of origin (UNCHR, 2020). Statistics show that approximately 85% of displaced people[1] live in a developing country just across the border of their country of origin (UNCHR 2019, 2020). Drawing from the experience of teachers working with refugees in Turkey, this present study explores the motivational dynamics in Syrian refugees and their psychological adjustment within the context of a self-determination theory as well as teachers' experience working with refugees. The findings may assist in developing more inclusive policies and interventions to help refugees with their post-migration adjustment.

Self-Determination Theory

SDT (Deci & Ryan, 1985; Ryan & Deci, 2000, 2017) is a theory of human motivation and development, and emphasizes that human organisms have an innate drive to grow an internal unified sense of self and self-determined living. SDT explains human behavior with six sub-theories: Cognitive Evaluation, Organismic Integration, Causality Orientation, Basic Psychological Needs, Goal Content and Relationship Motivation Theories. The present study is particularly interested in the Basic Psychological Needs Theory (BPNT; Ryan & Deci, 2017). BPNT identifies three universal needs (i.e., autonomy, competence, relatedness). Self-determination through these needs "is an energizing state that, if satisfied, conduces toward health and well-being but, if not satisfied, contributes to pathology and ill-being" (Ryan & Deci, 2000, p. 74).

According to BPNT, the need for autonomy drives people to engage in activities with congruence and vitality. The need for competence drives people to produce effective outcomes and

[1] Researchers use the terms *refugees*, *asylum seekers*/*asylees*, *involuntary migrants*, and *forcibly displaced people* to describe people who left their country due to war, torture, and political violence, and for many other life-threatening reasons. In this present study, *refugee* is used as an umbrella term in references to people who flee into another country for protection regardless of their legal status in the host country.

exercise one's capacities. The need for relatedness drives people to connect with others and feel respected and cared for in relationships. The theory makes a distinction between a controlling vs. nurturing environment. A nurturing environment enhances individuals' sense of competence and autonomy through an ongoing process of elaborating on their unified self-structure (Ryan & Deci, 2017). Conversely, a controlling environment compromises this innate motivation, intensifies need frustration, and leads to passive/avoidant self and mental health concerns (Bartholomew et al., 2011; Chen et al., 2015; Ryan et al., 2016; Ryan & Deci, 2017; Vansteenkiste & Ryan, 2013).

Psychological Adjustment in Refugees and Self-Determination

Migration problems challenge refugees' psychological adjustment. The vast majority of refugees have pre-migration traumatic experiences caused by exposure to war, including torture, political, physical and sexual violence, and human trafficking (Fazel et al., 2005; Gürel & Büyükşahin, 2020; Lindencrona et al., 2008; Nickerson et al., 2015; Steel et al., 2017). They face harsh violent conditions threatening their life or physical integrity. Also, arriving in the receiving country means going through a long and dangerous journey. Survivors spend a considerable time in refugee camps where resources are extremely scarce (Bemak, Chung, & Pedersen, 2003; Bhugra, 2004). Most refugees face hardships during post-migration like problems with learning local language (Boylu, 2020). They report facing difficulties accessing education, healthcare, psychosocial services, and the labor market. In addition to these difficulties, due to society's prejudices or the media's effort to portray them as criminals, refugees face harsh discrimination in host countries (Reitmanova, Gustafson, & Ahmed, 2015; Schmitt, Branscombe, & Postmes, 2014).

SDT provides a useful perspective in exploring and understanding refugees' psychological adjustment. We hypothesize that a controlling environment (e.g. discriminatory) hampers the need satisfaction and leads to a passive self whereas a nurturing environment (e.g., inclusive) facilitates this motivational system and leads to a productive self (e.g., Ryan & Deci, 2017). For example, a meta-analysis of 59 independent comparisons of refugee and non-refugee participants, including 67,294 participants (22,221 refugees), provided evidence that refugees who had favorable post-displacement conditions (e.g., accommodation, access to labor market) tended to show fewer psychological symptoms compared to refugees who did not have this opportunity (Porter & Haslam, 2005). The same study showed that refugees in permanent, private accommodations tended to have significantly better mental health outcomes compared to refugees in institutional and temporary private accommodations. Consistently, Deci and Ryan (1985) propose that "integrated self-regulation is the natural outcome of internalization that is not impeded or thwarted by environmental influences" (p. 186). Refugees, however, experience fundamental challenges in obtaining authorization to have residency in the host country. The host country expects them to repatriate to their country of origin, but it is beyond their control as their homeland is mostly unsafe. This situation of not having access to

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the basic rights and opportunities like education, healthcare and labor market harms their sense of autonomy and competence (Porter & Haslam, 2005). Favorable post-displacement conditions would thus activate refugees' adjustment and self-determination, yet constraining post-displacement conditions would frustrate this motivational system. Therefore, there is need for more research investigating the role of basic psychological needs in refugees' psychosocial adjustment in order to develop more inclusive policies and interventions.

The Present Study

The present research includes vocational and language teachers in Istanbul, Turkey. We have several reasons to explore teachers' observations and their experience working with Syrian refugees. Syrian refugees seek education because they may obtain essential qualifications through education in Turkey, leading to a recognized profession or help them document professional skills through vocational training. Teachers become the *welcoming* face for those refugees who receive education and they serve as a bridge between the local Turkish culture and refugees. In addition, teachers spend a lot of time in the classroom. This length of teacher-student relationship provides teachers with many opportunities to observe refugee students on multiple occasions (e.g., in- and out-classroom activities). It is, therefore, essential to know what teachers observe in their refugee students and how they locate themselves in helping their refugee students. Consequently, we hypothesize that self-determination is the major energizing factor for refugees in navigating their life and they are motivated to meet their basic needs. We also aim to explore the teachers' experience working with Syrian refugees.

Based on this purpose, the following research questions are examined:

1. What are the characteristics of psychological adjustment of the Syrian forcibly displaced people in Turkey?

2. How does self-determination theory explain the psychological adjustment of the Syrian forcibly displaced people in Turkey?

3. How is the teachers' experience working with the Syrian forcibly displaced people in Turkey?

Method

The present study is a qualitative analysis of 12 vocational and language teachers' accounts of refugee child/adult students' resettlement experiences in Turkey. A series of semi-structured interviews were conducted in the first half of 2019. A content analysis was applied to the verbatim transcription of these interviews as described in previous research (e.g., Zhang & Wildemuth, 2009). The study was conducted according to the Declaration of Helsinki. Participants were recruited

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through list-serve invitation emails and the interviews were conducted with the teachers who volunteered to participate in the study after signing the informed consent.

Participants

Participants were self-identified Turkish, full-time teachers, working at vocational (N = 4) or language (N = 8) schools. Their age ranged from 29 years old to 42 years old (M = 34.27, SD = 4.94), one of them did not report their age but had 30 years of teaching experience (Females = 7, Males = 4, Not reported = 1). Participants had an average of 10 years of teaching experience (M = 9.58, SD = 6.86), ranging from 4 years to 30 years, and they had a work experience with forcibly displaced people of at least 1 year (M = 4.25, SD = 2.57) and were working in their current position for at least 3 years (M = 7.75, SD = 7.16). In terms of socio-economic status, one of them reported having a low-income, nine of them reported having middle income, and two of them reported having an upper-middle income status. Two of them had a doctoral level, four had a master's level and six had an undergraduate level training in teaching.

Interviews

The researchers designed the interview questions based on the premises of BPNT (e.g., Ryan & Deci, 2002). These structured questions allowed in-depth analysis of teachers' experiences and views related to the refugees' experience in navigating their lives in Turkey. The first author of the present study conducted all interviews at the participants' work environment. The interviews were conducted in a confidential area where only the interviewer and interviewee were present. The interview length thus varied across participants, ranging from 32 minutes to 53 minutes. With the participants' permission, the interviews were voice recorded. The authors in the present study transcribed the interviews. The voice records were kept in a secure folder and were all deleted when the transcription process was completed.

Analysis

Three coders, who are the first three authors of the present study, completed the analyses. The coders had at least master's level training in counselling, received graduate level training in qualitative analyses, and are familiar with conducting qualitative research. Analyses were completed in two phases, using the Atlas.ti analysis program. The team independently coded all of the 12 transcripts. The team decided to code the transcripts sentence by sentence. Because the present study aimed to explore if they acted on their basic needs as described in self-determination theory, the team tested whether the themes of autonomy, competence and relatedness emerged consistently across the coders. In the second phase, the team met to discuss and organize the themes, and resolve disagreements in the codes. During this phase, the team went through the individual codes and discussed the meaning of each code. Table 1 presents an example of the codes. These individual codes

were named as subordinate themes. The team reviewed the transcripts and codes in order to analyze these individual codes. Then, these codes were reorganized under the superordinate themes. When there is consistency in terms of reorganizing the subordinate themes under superordinate themes, the individual codes were moved directly under the superordinate theme. As disagreements arose between the coders, the team made the final decision through consensus, which either resulted in deleting or retaining codes. In the final step of the second phase, the team organized and named the superordinate themes, which resulted in three major overarching themes.

Table 1. Coding Example

Coded original transcript	Subordinate Themes	Superordinate Themes	Overarching Themes
Participant_11: C*hildren do not have major problems adapting to the life in Turkey because they learn Turkish faster. However, the students who were older than 25 or 30 years old experience major problems*. Participant_9: *They share that they avoid speaking in classroom. They think that when they use Turkish wrong, it will get warning from teachers or undermined by their friends.*	Being good at local language, Turkish	Competence	ARC Facilitates Refugees' Adjustment

Results

The content analysis revealed three overarching themes. These overarching themes included superordinate and subordinate themes identified with the consensus of the three coders. Table 2 presents the subordinate, superordinate and overarching themes. This section explains these themes with direct quotes from the teachers who participated in the study.

Table 2. Overarching Themes, Superordinate Themes, Subordinate Themes

Overarching Themes	Superordinate theme	Subordinate themes
Autonomy, Relatedness and Competence (ARC) Facilitate Refugees' Adjustment	Autonomy	Drive for self-expression and growth
		Gender differences in autonomy
		Independence orientation
		Self-regulation skills
		Barriers to autonomy
	Competence	Drive to build professional skills and qualities
		Competency in planning future
		Being good at local language, Turkish
		Personal strengths and keeping calm facing challenges
		Barriers to competency

	Relatedness	Drive to form relationships with locals Available support from family, relatives and friends Social skills and time spent in the host country Being good at local language, Turkish Barriers to relatedness
Trauma Experience Interferes with Refugees' Adjustment	Symptomatic distress	Prevalent trauma exposure; Internalized problems and complicated grief; Avoidance of disclosure of trauma Time passed since trauma exposure Material loss
Teachers Transform through Working with Refugees	Teachers' Attitude	Approach vs. Avoidance Oriented
	Teacher Transformation	Increased sensitivity towards others' problems; Revaluing their relationships and increase in patriotism Vicarious resilience through indirect trauma exposure; Trauma informed teaching Intercultural sensitivity

ARC Facilitates Refugees' Adjustment

Autonomy

The need for autonomy emerged in subordinate themes of self-expression, self-regulation and orientation toward self-sufficiency and independence. Teachers also noted barriers and gender differences in the autonomy expressions. Teachers shared that refugee students are "…*driven to express their abilities and thoughts freely*…' (P4) and have '… *ongoing plans to stay in Turkey or go back to Syria, one way or the other they continuously plan their future'* (P5). Teachers agreed that their students strive to be active in daily life in Turkey. They would like to be self-sufficient and build their own livelihood: '*a few of them seek financial assistance, but usually the others pursue a dignified life, equal opportunities, more self-sufficiency, working toward building a world belonging to themselves*' (P11). Teachers emphasized gender differences, indicating that males have more autonomy in decision-making and females face more familial/cultural restrictions. These restrictions for females may include early departure from education to get married. Participant 10 narrated a story:

> *…some females are eager to attend higher education, buying books, attending extra courses, however, females who are accompanied by a male usually have a mindset to get married sooner than later…For example, I had a female student whose brother was sick during her university registration. She was not able to complete the registration because her brother was not available to escort her.*

Teachers proposed that their students who have personal strengths and capacity to regulate conflicts and emotions are better at being autonomous. Participant 4 noted that '…*some of them are capable of silencing their pain and tolerating challenges in daily life, and they are successful at redirecting their life. These students are usually more hard working and show faster improvement.'* Teachers also marked a difference between barricading and facilitating factors in autonomy expression, including financial and socio-political problems (e.g., problems in documentation or work/education authorization). They noted that it is not that easy to sustain their autonomy, '…*their opportunities are limited, dependent on finance. If you do not have money, it is difficult to make choices…'* (P8).

Competence

Teachers all agreed that their refugee students were driven to exercise their capacities. Coders reached a consensus that the subordinate themes of professional/vocational skills and proficiency in local language, emotion regulation and planning skills tapped into this drive to build competency. Teachers particularly pointed at emotion regulation, indicating their refugee students' ability to tolerate stress and persist on the task. Participant 5 noted that '*they do not stop trying, do not give up easily. When they face a problem either in education or social life like documentation, they do not give up till they solve it.'* They noted that students who remained solution focused, '… *grasping their goals with four hands…'* (P8) kept their peacefulness in face of negative events because '… *they know that they have to succeed, they do not have any other option*' (P8). Participant 6 shared that '… *these students do not complain or do not give up*…' (P6). Teachers claimed that proficiency in Turkish and transferable skills (e.g., technical and technological skills) help their refugee students to act more competently.

Teachers noted that the major barrier in developing competency stems from lack of proper documentation: Refugees' professional degrees and skills are unrecognized in Turkey. Refugees thus work at a position below their qualifications, '…*working long hours for less income*…' (P9). Their degree or qualifications are usually not valid in Turkey. Participant 6 noted that '*a doctor had to study at a Turkish university because his degree was not accepted here. He was working as an assistant pharmacist.'* Teachers consistently emphasized the role of language and professional skills in the sense of competency. Teachers thus often noticed the intellectual loss that led refugees to feel inadequate in dealing with daily problems. Participant 11 noted:

> *… Syrian refugees face major problems in finding jobs. Particularly, those who were civil servants at Syrian state face major problems. For example, some of my students had mastery in a second language; they were mathematicians or French language teachers. However, they were working at construction because they are undocumented or can find a day job here and there. At this point, they were having major adaptation problems*.

Relatedness

Another theme emerged repeatedly was relatedness, which can be examined in terms of their will to form ingroup and outgroup relationships. According to teachers' reports, refugees' sense of connection improves throughout time despite the challenges in negotiating heritage and local cultural expectations in forming relationships. Teachers highlighted the refugees' need '… *to be part of the Turkish community*' (P1) and '… *to be part of our* [Turkish] *culture'* (P8). However, this integration has a cost. Participant 8, for example, noted that students' acculturation into Turkish culture sometimes cause them to have conflict with their community, '…*they are changing and their family does not accept this change…causing discord* [between refugees and their families] *like especially in females, cloths, dresses and in their social relationships.*'

Teachers though emphasized the importance of family ties and kinship, noting that '… *they are strongly affiliated with their families'* (P7), '*they live in a crowded family, sometimes more than one family live in a flat'* (P5), and '*they collaborate with one another to start a business, they prefer working with other Syrians'* (P11). Teachers reported that refugees had a strong motivation to support one another, '*... some students even sending money to their family members back in Syria'* (S6). According to teachers, students who set themselves apart from all members of their families look isolated and lonely in the classroom and report fewer connections with locals. Teachers also emphasized the essential role of language in their adaptation. Refugees are less isolated and become more confident with their improved Turkish. 'S*tudents who acquire language skills become happier. They become more positive and joyful, make friends with Turkish people, even begin to visit other cities in Turkey*' (P11). Some teachers added that *'quickly learning to speak Turkish helps them participate in social life'* (P3).

Teachers emphasized ingroup or outgroup conflicts and emotional barriers as risk factors in thwarting the relatedness needs. Participant 2 noted that '*students with similar faith and religious practices hang out together, go to mosques to pray and visit historical locations together. I think they communicate easier and receive support within this community.'* However, political division back in Syria has the risk of polarizing the students in the host country. When students develop '…*opposing views due to ethnic or sectarian differences*…' (S6), they are likely to fend off or become involved in '…*prolonging debates…'* (P6). Therefore, students seemed to refrain from sharing opposing or controversial opinions in the classroom. Teachers also highlighted the between-group barriers, concentrating on fear of rejection as this teacher puts: *'They try not to interact with locals as much as possible because of fear of rejection. ... Unfortunately, this leads to social isolation in their lives' (P10).*

Trauma Experience Interferes with Refugees' Adjustment

Teachers identified prevalent symptomatic distress, evident in the subordinate themes of prevalent trauma exposure, complicated grief, avoidance of trauma disclosure and material loss. This symptomatic distress appeared to be severer depending on the time passed since migration. Teachers reported that trauma exposure is prevalent, '*I did not see a student who did not lose a loved one to the war'* (P2), and some refugees continue to face post-migration traumatic experiences like '*during my class, one of my students learned his brother killed in the war'* (P12). Teachers proposed that refugees *'… choose not to share their traumatic experiences'* (P7) as a way of self-preservation and avoiding the risk of overwhelming others with their traumatic stories. This symptomatic distress alleviates through time. Participant 9 noted about the symptomatic distress:

> *They have to cope with it. It is an internal challenge for them. When they overcome it, they slowly begin engaging in the* [host] *society, make sense of their experiences, then by communicating with their environment, they find their place in the community. Of course, it progresses in phases.*

Teachers also shared symptoms of complicated grief and trauma in their refugee students. Participant 5 shared:

> *One of my students said that she was a war reporter and working at a hospital there. She was reporting about the wounded or killed people in the war. She stated that she saw her cousin, and the day after, she saw her brother among the dead bodies. She shared feeling shocked and not being able to move at the time of seeing her brother. She was under the influence of the event when she was telling the story to me, even after five years had passed.*

Teachers noted that refugees learned how to suppress their traumatic memories and experiences. However, teachers highlighted that the traumatic experiences surfaced up during classroom interactions/activities through startle response, flashbacks or trauma memories. Some teachers reported that students had common traumatic memories and random triggers activated these memories during the instruction. Teachers also noted that it was not only about losing relatives, there was an added influence of losing their familiar environments (e.g., their friends, pets or other material losses), which often emerged in their assignments.

Teachers Transform Through Working with Refugees

The analyses revealed a consensus about two superordinate themes. First, teachers had either an approach-oriented or an avoidance-oriented attitude toward working with refugees. Second, teachers experienced transformation evident in their increased sensitivity toward others' problems,

intercultural sensitivity, resilience through indirect trauma exposure, trauma informed teaching skills, and dedication to their relationship with their family and country.

Teachers' Attitude – Approach vs. Avoidance Oriented

Some teachers were engaged in their refugee students' problems. They noted that 'I would like to educate them, be an ally for them achieving their goals' (P10). Participant 5 stated that 'we become like their mentors. When they have a problem, they reach out to us first to see how we can help them.' In this approach-oriented style, teachers also showed sensitivity about the differences between 'the local culture and refugees' heritage culture…' (P8) and their pain, '…multiple times I left the class with tears" because "they share extremely sad stories' (P11). They reported claiming an advocacy role, '…I tell their stories to my friends and relatives to raise awareness about their painful past' (P11), '… as much as possible, I do not allow them to be discriminated, I react very harshly, I am very protective of them' (P12).

The other major attitude in teachers can be described as avoidance. Some teachers reported avoiding discussing refugees' traumatic stories, 'I think I am a little bit distanced, they do not come to me with their personal problems' (P2). While they reported respect for refugees' pain, they remained distanced in order to protect themselves and their students from overwhelming emotions. Some teachers also reported not knowing how to handle the situation, 'We can empathize with them to some extent, but it is their trauma… I did not know what to say. I mean, you do not know how to intervene at that moment' (P5).

Teachers' Transformation

Teachers reported transformation in multiple areas due to teaching refugees. Working with refugees led teachers to be more willing to help others and aware of other people's problems, '... *My perception of other people's pain opened up. I think more about reasons underlying other people's behaviors when I get angry with them'* (P2). Another change was about their perception of their own problems, which may be called vicarious resilience. Teachers reported increased sense of gratitude for their own and loved one's safety, closer relationships with family, heightened empathy and motivation, and increased openness and tolerance toward others:

> *In general, we keep whining about the problems in our lives. These people increased my vigor toward life…. I became more grateful and developed awareness towards others' suffering… Actually, I gained a greater awareness about these issues after working with refugees. This awareness does not only pertain to refugees but towards everybody* (P2).

It was common to observe that subjects expressed patriotic feelings and gratitude for their country, sharing that:

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> *… the more you think of nation, homeland, country, it created such a consciousness in me. Definitely, first a gratitude mechanism begins working because you see what happens when you do not have a nation. This definitely raised my awareness about my country* (P12).

Another change was about their teaching practices. They reported being more mindful about potential trauma in their students, particularly refugees, '*I used to raise my voice to manage the classroom. I saw some students startling. I began not making sudden moves in the classroom…It was more obvious in children than adults*' (P11). For example, they emphasized the importance of choice of words (e.g., triggers, shouting), sense of humor, a safe classroom environment, being available for emotional support, and cultural dynamics.

The impact of working with refugees though is not always received well. For example, participant 9 shared that they are also '*being negatively influenced.'* Some of the teachers alluded to an indirect exposure to traumatic details, '*I remember getting out of the classroom to cry and collect myself. During the writing assignments – tell your closest friend, tell about your family. It is full of sorrow. These writing assignments transformed my perception of them'* (P10).

Discussion

The primary objective of the present research was to explore how teachers perceive the Syrian refugees' motivational dynamics and gauge teachers' experience working with refugees. The results of content analysis highlighted three overarching themes. The first theme indicates that self-determination is a major motivator in Syrian refugee students despite the horrendous traumatic experiences and present resettlement stressors. The need for autonomy, competence, and relatedness (ARC) facilitate refugees' adjustment. A second theme kept repeating in teachers' stories of their refugee students. This second theme revealed that trauma is a major concern in their refugee students that often interferes with their psychosocial adjustment. The third theme pointed to a transformation in the teachers' view of themselves and others as well as a dichotomous attitude of approaching to or avoiding the refugee students' personal life.

Autonomy, Relatedness and Competence (ARC) Facilitate Refugees' Adjustment

Deci and Ryan (1985) state that self-determination "addresses the energization and the direction of behavior and it uses motivational constructs to organize cognitive, affective, and behavioral variables" (p. 7). The findings of the content analysis pointed to the significant role of the basic universal needs. It was evident in teachers' stories that each of the needs underlying self-determination was a major energizer in refugees' efforts to deal with daily stressors. First is the need for autonomy. Consistent with the theoretical framework, the refugee students were driven to express themselves, gain independence in their lives, and regulate their emotions and thoughts. Gender

appeared as a cultural difference in making decisions: males had more resources and space to navigate their life and make decisions independently. However, females were more dependent on males in making decisions like attending college. Second is the need for competency. In the given context of migration status, the refugee students strived to develop professional skills and competency in planning their future. Teachers reported that the language and emotion regulation skills were key in building competency in dealing with resettlement stressors. Third is the need for relatedness. For this basic universal need, the sense of connection with both the heritage and local community was essential. Teachers noted that refugees had close relationships with their family and friends as well as sought forming relationships with local people. Teachers also noted individual differences in the need for satisfaction of relatedness: it was easier to form relationships with local people for the refugee students with good Turkish and social skills.

SDT proposes that overpowering environmental control impinges on the basic needs and internalized motivational system, which eventually leads refuges to passivity and psychopathology (Deci & Ryan, 1985; Ryan & Deci, 2017). Consistent with SDT, previous research found that financial problems, lack of a supportive community (Bogic, Njoku, & Priebe, 2015; Lindencrona et al., 2008), perceived discrimination (Kira et al., 2010) and mental health concerns due to past trauma and resettlement issues (Nickerson et al., 2015) impede refugees' post migration adjustment. The participants in the present research identified similar concerns. They shared that their refugee students work at underpaid positions, experience a loss in their professional status, and suppress their emotional difficulties in social environments. Research showed that refugees with nurturing relationships have better psychological adjustment (Schweitzer, Melville, Steel, & Lacherez, 2006; Simich, Beiser, & Mawani, 2003). In addition, all teachers agreed that language was a significant empowering agent for their refugee students in rebuilding their livelihood: Turkish language proficiency not only facilitates their refugee students' competence but also it paves the way for connecting with locals. This result is consistent with other studies suggesting learning the language of the host country is crucial in participation in the local social life (El Khoury, 2019; Vojvoda Weine, McGlashan, Becker, & Southwick, 2008; Waxman, 2000). The teachers also emphasized the importance of familial and friends' support in expression of the ARC needs and psychosocial adjustment. There is no doubt that a nurturing environment bolsters the expression of the ARC needs. The psychological or physiological needs underlying self-determination "…if not satisfied, contributes to pathology and ill-being" (Ryan & Deci, 2000. p. 74). The facets of a nurturing environment in the context of the present study included supportive teachers, welcoming local community, good relationships with the endogenous community and the presence of legal authorization to receive education and have access to the labor market.

The present findings reinstate a dimension of the inbuilt motivational factors: the autonomy, relatedness and competence are the persistent energizers. The SDT concept of needs '…supplies a

criterion for specifying what is essential to life' and the organism strives to satisfy these inbuilt needs (Ryan & Deci, 2002, p. 7). That is, according to the teachers' stories, their refugee students seek ways to rebuild their own livelihood despite all these war-related and post-displacement challenges. SDT actually points to an optimal level of environmental control (Deci & Ryan, 1985); When environmental resources exceed this optimal level of challenge, individuals become rigid and passive in meeting their basic motivational needs (Roth, Vansteenkiste, & Ryan, 2019; Ryan et al., 2016). However, the present findings propose that the inbuilt motivation system of the ARC keeps people active in seeking ways and enduring the life difficulties, resetting the tipping point of the *optimal level* at a higher point.

Trauma Experience Interferes with Refugees' Adjustment

Trauma is one of the most important issues in research focusing on refugees. This construct was also sound in the present study. Refugees experienced trauma during pre-migration and perimigration stages of their flight from their homeland, and some refugees continue to face insidious trauma during resettlement such as discrimination, unemployment, and social isolation (Kira et al., 2010; Li, Liddell, & Nickerson, 2016; Porter & Haslam, 2005). In our study, teachers noticed that their refugee students continue to face traumatic events through their family back at home, but suppress their traumatic experiences to avoid burdening other people. They also noted that these unresolved traumatic experiences interfered with their academic and social life. The present findings are consistent with previous research. Severely traumatized refugees use avoidance and emotional suppression as a maladaptive coping mechanism (Chung et al., 2018; Hooberman, Rosenfeld, Rasmussen, & Keller, 2010; Ssenyonga, Owens, & Olema, 2013). In addition, the present findings showed that refugee students rarely seek support and assistance for their mental health concerns. In our study, the teachers found out their students' traumatic experiences randomly during classroom activities. Studies about teachers' experiences indicated that teachers often come across expressions of PTSD symptoms during classroom activities (Aydin & Kaya, 2019; Mitchell, Miller, & Brown, 2005).

Teachers Transform through Working with Refugees

The teachers reported both positive and negative impacts of working with refugees. Some reported changes in their worldviews and values, including patriotic feelings and revaluing their relationships. In addition, previous research primarily identified challenges (e.g., indirect exposure to traumatic event details) and difficulties in working with this population for teachers (Cho & Reich, 2008; Eryaman & Evran, 2019; Gürel & Büyükşahin, 2020; Roxas, 2010; Yıldız Çelik & Kodan, 2020) in addition to research investigating the positive influence on teachers' wellbeing (İra et al., 2021). In this study, teachers' attitude and potential transformations were identified in addition to these challenges. Teachers expressed approach and avoidance orientations, either a strong dedication

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to refugees' success and wellbeing or distancing from refugees' struggles. The avoidance orientation was often due to teachers' sense of inadequacy in intervening in refugees' traumatic experiences and desire to preserve their own wellbeing.

Limitations

The present research has several limitations. Given that the sample size was limited to 12 Turkish teachers, this study is not a representation of all teachers who has taught Syrian refugees. Readers should use caution when interpreting these results and generalizing the findings to other teacher and refugee groups. This is a qualitative study, which compromises the objectivity of the findings. In order to increase the validity of the findings, three researchers separately coded the transcribed interviews. That is, the present findings are limited to the consistency in the codes. Another limitation is the location of the study. The study was conducted in a metropolitan city in Turkey and may not capture the environment of refugees who reside in rural areas or less developed locations.

Recommendations for Practitioners and Policy Makers

The interviews suggest that there is a strong need for more organized and comprehensive psychosocial services and policies for both refugees and the professionals working with refugees in order to create an inclusive environment. First, psychosocial services may emphasize refugees' inner motivation to improve their lives. That is, refugees are motivated to better their life and may benefit from an enabling public policy and interventions. Second, language skills emerge as a key in the refugees' psychosocial adjustment. Therefore, refugees may benefit from interventions to teach the local language. Third, refugees' relationships to their endogenous and local communities empower them in rebuilding their life. The policy and subsequent interventions may enable refugee groups to build their community. Fourth, trauma is a major concern and challenges refugees in their resettlement process. The interventions may focus on providing trauma informed care for refugees, which may include easier access to health care services. Lastly, teachers encounter challenges in teaching the refugee groups. Teachers thus may benefit from training and psychoeducation about appropriate boundaries, self-help strategies and trauma-informed teaching skills.

Recommendations for Future Researchers

There are several recommendations that we derive from the present research. The results discussed in this study represent the teachers' experience working with their refugee students. Even though these interviews provided valuable insights and findings, future researchers may replicate the findings through interviews with refugees. Future researchers may focus on specific age groups of teachers and the refugee population served. As stated in the limitations, the location of the study was a metropolitan city in Turkey. Therefore, future researchers may replicate the findings in different

settings, including rural areas, developing and developed countries or other refugee groups. Consequently, future researchers may replicate the study findings through interviews and/or quantitative methodologies by considering the aforementioned details.

Conclusion

The present study provides a notable perspective about teachers working with refugees, emphasizing the essential role of a natural motivation to build a nurturing and self-reliant life. Therefore, refugees are not only fleeing from persecution but also pursuing normalcy in their lives, which must support their autonomy, competency, and belongingness. There is a need for a paradigm shift in research, intervention, and mental health policy in refugee work, emphasizing their inner strength. We need more research to reveal their strengths and resources so that psychosocial interventions and inclusive policies can be implemented based on their strengths and resources.

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Appendix

Interview Form in Turkish

Görüşme Formu	
Uygulayıcıya Yönelik Yönerge: Her bir soru için yeterli zamanı veriniz. Eğer kişi herhangi bir soruyu cevaplarken rahatsız olduysa veya cevaplamak istemediyse nedenini nazikçe sorun ve gözlemlerinizi not edin. Herhangi bir soruyu cevaplamaya kesinlikle zorlamayınız. Koyu yazılmış soruları sorun. Ok ve yıldız işareti ile belirtilmiş alt soruları ise sadece ana soruda verilen cevapta değinilmediği zaman ek bilgi almak için sorun. Eğer mülakatı veren kişi zaten bu konulara değinmiş ise zaman kazanmak için bu alt soruları geçebilirsiniz.	
Eğitim geçmişinizi özetleyebilir misiniz?	
İş tecrübenizi özetleyebilir misiniz?	
	Suriyeli sığınmacılar veya benzer gruplar ile olan iş geçmişinizi anlatır mısınız? Örneğin bulunduğunuz pozisyonları ve çalıştığınız kurumları.
Alan 1 – Aitlik Algısı	
Çalıştığınız sığınmacıların günlük hayatta karşılaştıkları zorlukları düşünün – sizinle paylaştıkları veya sizin gözlemlediğiniz (örn: sağlık hizmetleri, eğitim koşulları, iş olanakları, yasal gereklilikler, yerel halk ile ilişki, toplum beklentileri). Bu zorluklarla mücadele ederken çevreleri ile olan ilişkilerini nasıl tanımlarsınız? Lütfen örnekler ile anlatın.	
Ek bilgi almak için bu soruları sor!	Aile bireyleri ile olan ilişkilerini nasıl tanımlarsınız? Psikolog, sosyal çalışmacı, öğretmenler gibi çalışanlar ile olan ilişkilerini? Arkadaşları veya yerel halk ile olan ilişkilerini nasıl tanımlarsınız? Kendi etnik ve inanç grubundan olan kişiler ile olan ilişkilerini nasıl tanımlarsınız? Mesela aitlik duyguları?
Mülakatı veren kişinin yaşantısını öğrenmek için bu soruları sor.	Bu anlattığınız durumların yaşandığı anları düşünün. Nasıl tepki verdiniz? Nasıl müdahale ettiniz? Yaşadığınız hisleri tanımlar mısınız?
Alan 2 – Yeterlilik Algısı	
Yine çalıştığınız sığınmacıların günlük hayatta karşılaştıkları zorlukları düşünün – sizinle paylaştıkları veya sizin gözlemlediğiniz (örn: sağlık hizmetleri, eğitim koşulları, iş olanakları, yasal gereklilikler, yerel halk ile ilişkisi, toplum beklentileri). Bu tür zorluklarla baş etmede kendi beceri ve yeterlilikleri hakkında neler ifade ettiler – sözel veya davranışsal? Örnekler ile anlatınız.	
Ek bilgi almak için bu soruları sor!	Yeterli olduklarını nasıl ifade ediyorlar. Örneğin hedef belirleme ve hedeflerine doğru ilerleme, başarılı hissetme, zorluklarla yüzleşebilme, mücadele etme, bir uğraş bulma, vb. Hayatlarına yön vermelerini kolaylaştıran veya engelleyen kişisel veya çevresel faktörler nelerdir? Geçmiş travmatik olayların etkisi üzerine gözlemleriniz neler?
Mülakatı veren kişinin yaşantısını öğrenmek için bu soruları sor.	Verdiğiniz bu örneklerdeki kişileri düşündüğünüzde sizde uyandırdığı duygu ve düşünceler nelerdir? Nasıl müdahale ettiniz – soyut veya somut?

Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Syllabus Design in the Action-oriented Curriculum[1]

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Abstract

The Common European Framework of Reference for Languages (CEFR) introduces a new goal for language teaching, that of training social actors rather than mere communicators. Thus, social action as a new reference action corresponding to this new reference goal in English language teaching necessitates a departure from taking interaction or communication as the ultimate goal in an ELT curriculum. This paper argues that mini-projects, which are the best models of social action compatible with the constraints of school education, should be the basic units in an action-oriented curriculum. Syllabus in such an action-oriented curriculum functions primarily as linguistic resources needed by the students to be able to carry out the proposed mini-projects. Thus, the task of the syllabus designer is to select and grade the language content according to the mini-projects proposed in an action-oriented curriculum, even in a second phase, a posteriori control of this content and its progression must be carried out, which may lead, in a third phase, to modify the mini-projects or even their chronological order.

Keywords: Action-oriented Approach, Syllabus Design, Curriculum Development, Social Actors

DOI: 10.29329/epasr.2022.248.2

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[1] This article was first presented at the conference: Crossing Borders of Scholarship for Teaching and Learning English: Remapping Routes and Building Bridges, which was held by English Scholars Beyond Borders and Dhofar University in Dhofar, Oman, on 4-5 december, 2021.

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Introduction

In one of the Council of Europe documents, which contributed significantly to the development of the communicative approach (CA), namely, 'The Threshold Level in a European-Unit/Credit System for Modern Language Learning by Adults', Van Ek (1975) illustrates the characteristics of the learners for which this document was developed as follows:

1. they will be temporary visitors to the foreign country (especially tourists);

2. they will have temporary contacts with foreigners in their own country;

3. their contacts with foreign-language speakers will, on the whole, be of a superficial, non-professional type;

4. they will primarily need only a basic level of command of the foreign language. (p.9)

Such a characterization indicates that the type of action for which the learners will be prepared is language interaction, the type of situation where the learners will use the target language is a short term contact situation and the reference objective is to enable the learners to communicate in the target language (Puren, 2014a, 2014b, 2014c, 2020a).Thus, the ultimate goal is to equip the learners with a basic level of proficiency in the target language so that they can communicate later on with the users of the target language in temporary contact situations. Foreign language curricula, syllabus design as well as textbooks in the early versions of the CA are also affected by such characterizations since the goals and objectives of the curricula are stated only in terms of communicative goals and objectives, syllabus content is largely specified in terms of functions, notions and/or situations, unit objectives of communicative textbooks are also stated in terms of communicative objectives.

Developments on the Threshold Level document came with the two further documents of the Council of Europe, namely, the Common European Framework of Reference for Languages (CoE, 2001) and CEFR companion volume (CEFRCV) (CoE, 2018), where a new reference action and a new reference goal are set for the language learners, social action and social actors, respectively, both of which indicate that there is a rupture between the CA and the action-oriented approach (AoA). Due to this new reference action (social action), Puren (2020a) renames the AoA as the social action-oriented approach (SAOA) and Acar (2021c, 2021d) uses the term social action-based learning (SABL). Thus, the AoA is used in this article to refer to SABL.

Training Social Actors as a New Goal in ELT

CoE (2001) introduces the AoA in the following quote, where there is a clear departure from (1) the reference action of the CA, interaction described in terms of speech acts to that of the AoA,

social action, and from (2) the reference goal of the CA, training communicators, to that of the AoA, training of a social actor:

> The approach adopted here, generally speaking, is an action-oriented one in so far as it views users and learners of a language primarily as 'social agents', i.e. members of society who have tasks (not exclusively language-related) to accomplish in a given set of circumstances, in a specific environment and within a particular field of action. While acts of speech occur within language activities, these activities form part of a wider social context, which alone is able to give them their full meaning. (p.9)

While speech acts are carried out within language activities, "the reference act is extended in the AoA to social action which is an act with the other" (Puren, 2006, p.6). Thus, speech acts have their full meaning when they are part of social actions. Puren (2006), furthermore, explains the rationale underlying the break between the CA and the AoA in the above quote as the evolution of social needs in the European integration process: "It is no longer just a matter of preparing European citizens to communicate during punctual meetings, but to work between them in the long term (a shift in objective from "talking with" to "acting with")" (p.8).

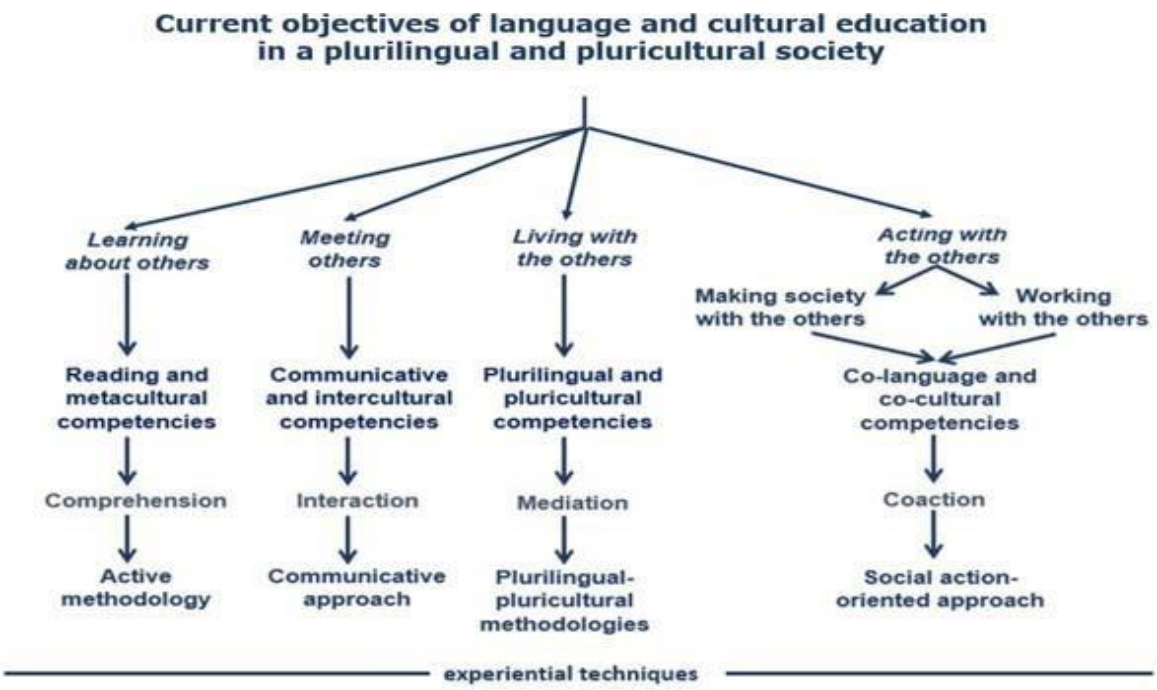
Both the CA and Task-based language teaching (TBLT), which is considered as a strong form of the CA (Ellis, 2003) can be considered within the communication paradigm since their reference action is language interaction and their social reference objective is to prepare the learners to meet the others and to be able to communicate with them. Ellis (2003), for example, puts forward that "a task seeks to engage learners in using language pragmatically rather than displaying language. It seeks to develop L2 proficiency through communicating" (p.9) and Willis (1996) argues that "tasks are always activities where the target language is used by the learner for a communicative purpose (goal) in order to achieve an outcome" (p.23). Thus, communication is not only the means but also the goal in TBLT.

Meeting the challenges of a multilingual and multicultural society, however, is the main reason why CoE (2001) and especially CoE (2018) move towards a new reference action, mediation. CoE (2001), in its notes for the user, puts forward that

> Chapter 8 discusses the principles of curriculum design involving the differentiation of language learning objectives, especially in the context of building an individual's plurilingual and pluricultural competence in order to deal with the communicative challenges posed by living in a multilingual and multicultural Europe.

Thus, the social reference objective in such a multilingual and multicultural society like Europe is *living with the others*, and the reference action at the service of this objective is *mediation*. The AoA, on the other hand, indicates a new social reference objective, which is *acting with the others*, and a new reference action, which is *co-action* or *social action* (Puren, 2004, 2020a). Consequently, the action for which the students (social actors) will be prepared is social action in the AoA. Puren (2015, p.6) indicates coherently the social reference objectives, the necessary language and cultural competencies necessary for coping with the challenges of these objectives, and the related reference actions in table 1 below:

Table 1. Current Objectives of Language and Cultural Education in a Plurilingual and Pluricultural Society



Social action training, or co-action, consists of training to make society as good citizens with others in the public domain and training to work effectively with others in the professional domain. In the educational domain, social action brings together the two educational challenges: students have to 'make a class society' (together) in their 'mini-classroom society' in order to be trained as good citizens, and to work effectively with others (and the teacher) - this work consists of learning the target language and culture effectively in their 'mini-classroom company' - in order to be trained as good professionals in their future professional company later on since they are equipped with the transversal competencies, the ones that are required both in the collective learning of the target

language and culture and in a company. This is the reason why Puren (2021b) considers the language classroom, in the AoA, as a *co-cultural incubator*:

> …by exploiting the homology between the classroom micro-society and the outside society, one can consider and make the language classroom function as a "co-cultural incubator", i.e. of social action culture, i.e. a place and a time where students, in an intensive and secure manner because mediated by the teacher, have the opportunity to train themselves in competencies that will be necessary later on in their professional and civic lives: adapting to other ways of working, working in groups, facing the unknown, uncertainty and complexity, learning from one's own mistakes and the mistakes of others, producing while making the most of limited means, conceiving and conducting collective projects, self-evaluation individually and collectively, etc. The language-culture teacher can then fully claim a role as an educator in school teaching, and as a trainer in vocational teaching (2019b, p. 59).(p.37)

From a pedagogical perspective, more specifically in the teaching and learning of languages and cultures, Puren (2009a, 2014a, 2014b, 2014c, 2016, 2017, 2019) puts forward that pedagogical projects and mini-projects are two possible forms of implementing the AoA in and/or outside the language classroom. Pedagogical projects cannot be presented to the students in a preprogrammed way in a textbook or curriculum since they offer maximum autonomy to the students by allowing them to choose, design, implement and evaluate their projects autonomously (with the help of the teacher). Mini-projects, however, can be presented to the students in a pre-programmed form by the teacher, textbook, or the curriculum, and hence they offer the students limited autonomy compared to the pedagogical projects. The rationale behind choosing the pedagogical projects and mini-projects in the implementation of the AoA is that they serve the educational goal of training critical but responsible, autonomous but supportive social actors (Puren, 2017), who will act according to these values in the major domains of social life proposed in the CEFR: personal, public, educational and professional.

Puren (2009a, 2019, 2021a) dealt with the implementation of mini-projects in language textbooks and provided the pedagogical advice for the French textbook *Version Originale 4* - B2 (Paris: Éditions Maison des Langues), which is based on the AoA. Acar (2020), similarly, proposed a social action-based textbook design, which is guided by mini-projects, and Acar (2021a, 2021b, 2021c) offered mini-projects for some English textbooks used in Turkey to illustrate how to make these textbooks action-oriented in accordance with the Turkish ELT curriculum for the primary and secondary schools (MoNE, 2018), which claims to adopt the AoA.

Consequently, the clear implication of the shift from speech acts to social action and from training communicators to training social actors is that communication is no longer the ultimate goal

of language learning and teaching but is put at the service of social action, which have further implications for language curriculum development and syllabus design.

Syllabus Design in the Action-oriented Curriculum

Curriculum planning is a broad concept which not only includes the specification of syllabus but also needs, educational and linguistic goals and objectives, approach/method, and assessment and evaluation (Eryaman, 2010). In this line, both Nunan (1988) and White (1988) differentiate between curriculum and syllabus. Nunan (1988), for example, defines syllabus as the selection and grading of content.

> Here, we shall take as our point of departure the rather traditional notion that a syllabus is a statement of content which is used as the basis for planning courses of various kinds, and that the task of the syllabus designer is to select and grade this content.(p.6)

Thus, a syllabus is a sub-component of curriculum, which "is concerned with the planning, implementation, evaluation, management, and administration of educational programmes" (Nunan, 1988, p. 8). In this article, the syllabus is used to refer to the specification of language content (morphosyntactic, notional-functional, lexical content), which functions as resources for the students to be able to carry out the mini-projects, in other words, language content is at the service of social action.

Needs analysis is essential in the action-oriented curriculum since the students as social actors should have a margin of autonomy in the design of their actions so that they become partners in the process of developing effective language curricula. Consequently, a needs analysis, which offers the students themes, and for each theme, numerous proposals for possible mini-projects in different domains of the CEFR (personal, public, educational, professional), should be conducted as a first step in preparing the action-oriented curriculum. The students are required to classify them in order of personal preference, and even can propose other mini-projects that they prefer. Thus, the students can decide on what themes they would like to work on and what social actions they would like to perform according to their interests and their environment. It is also necessary to point out that for the very young learners and their mini-projects from the professional domain can be excluded but they are essential for the students at high school when they are oriented towards a certain professional domain.

The students' preferred themes and the corresponding mini-projects from different domains serve the specification of the language resources (morphosyntactic, notional-functional, lexical content) that the students need to be able to carry out the mini-projects as well as the cultural, documentary, and methodological resources. It is also important to note that since the theme is accompanied by different variants of social actions from different domains, full pre-specification of language content may not be possible so a margin of autonomy should be given to the textbook

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writers and the teachers so that they can deal with such language content in the textbook or the classroom as the need arises. The other reason why the authors of official programs must give the textbook writers a certain amount of autonomy is that the specification of language content also depends in part on the documents that are finally chosen.

The corresponding communicative language activities as communicative objectives (can-do objectives in the form of oral and written comprehension and production activities as well as mediation) are also specified according to the themes and mini-projects. Since communicative language activities are also determined by mini-projects, the status of communication in the action-oriented curriculum changes: It is a means at the service of social action. In short, in the action-oriented curriculum, both the language content and communication are put at the service of social action, which reflects the theory of language in the AoA: Language is a means of action as Puren (2021b) explains:

> The above-stated is reminiscent of what happens in the didactic reflection when one passes from the paradigm of communication to the paradigm of action: one realizes then immediately that, when it is not only a question of communicating, but of acting in a foreign language, the language is first of all an instrument of action, an instrument of work, before being a tool of communication. (p.28)

This view of language also shapes the goal of the action-oriented curriculum: training social actors, who can act together effectively both in the target language and their native language and the task of the syllabus designer is to select and grade the language content according to the mini-projects proposed in an action-oriented curriculum, even in a second phase, a posteriori control of this content and its progression must be carried out, which may lead, in a third phase, to modify the mini-projects or even their chronological order. Table 2 below presents a model of a social action program by didactic sequences, which includes a syllabus as a resource, and which is part of the curriculum:

Table 2. A Model of a Social Action Program by Didactic Sequences

Themes	Social Actions (Mini-Projects)	Communicative Language Activities	Resources			
			Cultural	Documentary	Linguistic	Methodological
	Educational domain : Public domain: Personal domain: Professional domain:	Reception Production Interaction Mediation				

The order of the columns is important since it is the action that determines the communication and the language resources. In other words, communicative language activities are determined by the themes and the corresponding mini-projects from different domains. Similarly, morphosyntactic, notional-functional, lexical content (syllabus) is specified based on the themes and the corresponding mini-projects as well as the cultural and documentary contents.

Cultural resources indicate the co-culture according to which the mini-project will be carried out. If the theme is *birthday party,* cultural resources indicate the main specific features of the Turkish, American, or Indian, etc., way of celebrating the birthday party. Documentary resources indicate the documents that the students will work on while preparing for the final product or performance of the mini-project. It is important to note that in the AoA, the documentary resources are not only those provided by the curriculum, the textbook, and the teacher but also those provided by the learners themselves.

Methodological resources refer both to learning methodologies and teaching methodologies. The necessary activities that the students will be involved in should be indicated and, in the activities, there must be activities of reflection (metacognitive) by the learners on the learning strategies they have implemented. This section relates to everything that concerns the teaching-learning co-culture: teaching-learning process or collective teaching-learning of the target language: indications on methodological components or components from different approaches and/or methods (pluri-methodology), information management activities (information literacy), advice on the organization of classroom activities (individual and group work, whole class). The choice of the methodological resources also depends on the documents that the students will work on.

Table 2 indicates that mini-projects are the organizing tools in the action-oriented curriculum. These mini projects put the students in actional-reuse situations where they will reuse the language content learned during the unit and in this respect, they differ from the communication situations or tasks of the CA, which are mostly artificially simulated. It is also important to note that mini-projects have an educational dimension, which contributes to training learners as social actors. While the students realize the mini-projects through the language resources that they learn, they also learn how to act together effectively both in their mini-society (classroom) and the outside society as real citizens. The action-oriented curriculum, thus, contributes to citizenship education. The educational dimension of the mini-projects is also what differentiates them from simulated communication situations or tasks of the CA.

A language textbook written in line with the action-oriented curriculum is thus organized around the mini-projects proposed in the curriculum. If, for example, the theme is *kitchen* in the social action program, the corresponding mini-project for the public domain could be *As a whole class, prepare a cookbook with local recipes to promote Turkish cuisine to the world and share it on social*

*media like Facebook (*Acar, 2021a). Developers of the action-oriented curriculum can just state this objective of the social action in the program and leave the design of the mini-project to the textbook writers or they can give the whole design of the mini-project in the curriculum themselves. Acar (2021a), for example, gives the full design of the mini-project for the above action objective as follows*:*

> A: As a whole class, prepare a cookbook with local recipes to promote Turkish cuisine to the world and share it on social media like Facebook.
>
> B: Open up Facebook account with a title you choose (e.g. Turkish cuisine, recipes for the world, etc.). You can also seek ways to invite your peers from other countries to share their cuisine on your Facebook account. Decide collectively on a title for your cookbook which reflects the content of your cookbook and add some inspiring subtitles on the cover to reflect your class identity (e.g. best recipe suggestions from class 8A of secondary school X).
>
> C: Search the internet as to what a recipe includes (e.g. The name of the meal, the number of people the meal can serve, ingredients and amount of ingredients, the steps of preparation instructions for cooking, the statement of cooking time, etc.) and decide collectively on the criteria for evaluating the recipes of the groups and agree on a format for your cookbook.
>
> D: Search the internet and/or consult your parents as to which recipes best represent your local cuisine. If your parents suggest recipes in your native language, write down every detail you searched in C and translate, as a group, the parents' recipes into English. Search the internet for the relevant pictures to accompany your recipe.
>
> E: In groups, write the recipe for your meal in the format you collectively agreed on in C.
>
> F: In groups, present your recipes in the class.
>
> G: The other classmates will listen to you, take notes, and evaluate your recipes by using the evaluation grid you formed collectively. Make suggestions to the groups whose recipes are not in line with the criteria and format you formed and developed collectively.
>
> H: As a whole class put together all the recipes in a single word or PDF format.
>
> I: Share your cookbook on social media.
>
> J. Follow up (as a whole class) on the likes and dislikes and the comments received from people about the cookbook on the social media. (p. 312)

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This mini-project addresses the public domain but the variants of this social action can also be proposed for the other domains in the curriculum: *As a whole class you will carry out a survey to specify the favorite meals of each person in the classroom* (educational domain); *you will help your mother in cooking a new dish that your family has never tasted before* (personal domain); *(imagine that) you are the owner of a restaurant. You will collectively invent a new recipe to offer to your clients* (professional domain).

Concerning the above mini-project from the public domain whose complete design is given, the objective of the action *As a whole class, prepare a cookbook with local recipes to promote Turkish cuisine to the world and share it on social media like Facebook* is announced at the beginning of the textbook unit as well as the communicative language activities to be realized and the language content that the students need to learn and use during the unit to be able to carry out this mini-project. The unit content, thus, prepares the students to be able to carry out the final social action, while the students carry out the steps of the mini-project during the unit simultaneously. At the end of the unit, the students will carry out the final social action, *share your cookbook on social media*.

Conclusion

The action-oriented curriculum no longer aims to prepare the learners to move across countries and be involved in short term contacts with the users of the target language as indicated in the Threshold Level document (Van Ek, 1975) but rather aims to prepare the learners to act together effectively by using the target language in their home or target culture, in short, to train them as social actors. Since mini-projects are the best models of social action compatible with the constraints of school education, they have the potential to train social actors as Puren (2009b) argues that

> Project pedagogy is the most historically accomplished form of school implementation of this co-action, because it strictly applies the principle of the homology between the end and the means: the students are trained in social action in society by acting in the very space of the classroom as full-fledged social actors. (p. 12)

Thus, the model of a social action program by didactic sequences in the action-oriented curriculum illustrates that communication is not the ultimate goal of this curriculum but that it is at the service of social action. Action-oriented textbooks to be prepared in accordance with this action-oriented curriculum model will be guided by the model of a social action program by didactic sequences in Table 2. Accordingly, such textbooks will state the unit objectives in terms of social actions rather than communicative objectives, which will be secondary objectives stated below the social action. Similarly, language resources will also be stated at the beginning of each unit to indicate that they are the language content that the students need to be able to carry out the mini-project.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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An Analysis of Secondary School Students' Empathy Skills in terms of Student- and School-Related Variables

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Abstract

This study aims to examine the empathy skills of secondary school students in terms of some selected variables at the student and school levels. The study group of the research, which was structured as a correlational survey, consisted of 1010 eighth-grade students attending 29 schools selected by random sampling in the province of Uşak during the 2021-2022 school year. The HLM 8 student version was used in the analysis of the data collected via Google Form. 80% of the difference in empathy scores was found to stem from the student-related variables and 20% from the school-level variables. A positive and significant relationship between the number of books read and gender variable and empathy scores was also identified, and it was concluded that as the number of books read by students increased, their empathy scores increased as well, and the girls had higher empathy scores than the boys. In addition, a negative significant relationship was found between the duration of daily internet use and empathy scores. While no significant relationship between school type and empathy was identified, students at secondary schools located in city centers were observed to have higher empathy scores than those located in small towns.

Keywords: Empathy, Hierarchical Linear Modeling, Secondary School Students, Correlational Survey.

DOI: 10.29329/epasr.2022.248.3

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Introduction

In line with the technological developments, various activities of social life such as communication and shopping have begun to change, an increasing number of individuals have begun to communicate and meet their daily needs by using smart devices connected to the Internet. This phenomenon has accelerated with the COVID-19 pandemic experienced at the global level, which brings up some questions such as "How much can individuals understand each other? How can a person make others feel that he/she understands them? A more important question is whether these recent developments have an impact on individuals' behavior and skills.

This question draws our attention to empathy (Batson, 2003; Eisenberg & Fabes, 1998; Hoffman, 1987; Lovett & Sheffield, 2007), which plays a pivotal role in shaping behaviors (Hogan, 1969) that positively predict prosocial behaviors aiming to help others without any self-interest. Empathy involves a person putting him(her)self in the shoes of another person and looking at events from his/her perspective, perceiving that person's feelings and thoughts correctly and communicating this to him/her (Rogers, 1975). Moreover, it is a skill that plays an active role in helping individuals to establish a healthy communication with self and others, helps them to socialize and get along with others better, and to solve problems with others without resorting to violence (Basch, 1983; Breems, 1988; Dökmen, 2008; Rogers, 1975; Yüksel, 2015).

Empathy, which is studied primarily by psychology and was previously claimed to be not fully teachable (Davis, 1990), has now been demonstrated to be a teachable skill (Shapiro, 2000) through a series of activities and curricula (Bal & Bilge, 2016; Batt-Rawden, et al., 2013; Yüksel, 2004). With the increasing feelings of loneliness and selfishness due to advancing technology and increasing industrialization, it has become increasingly important to create educational environments based on tolerance and sensitivity by analyzing the underlying causes of varying views and attitudes so that the individual can use effective means of communication. Empathy, which has a teachable nature, is needed in classroom environments, and it has begun to be covered in curricula as a targeted skill. The social studies curriculum in Turkey has also led the way in helping students gain empathy skills (Kabapınar, 2005; 2007).

The fact that households in Turkey have more than 90% access to the Internet from home and the increasing use of internet-based social media platforms (Turkish Statistical Institute [TUIK], 2022) have brought along some problems, and therefore, the Information Technologies and Communications Authority (BTK), which is the state institution responsible for the use and control of ICTs in Turkey, recommended students aged 10-14 (the age group involved in the current study) to spend only two or three hours online (BTK, 2022). In addition, it has been reported that individuals will experience some cognitive problems in interpreting and synthesizing, analytical thinking, and learning if their daily TV watching time exceeds two hours (Doğan & Göker, 2012). As such, a

relationship can be established between empathy (Hoffman, 2000), which includes cognitive processes as well as affective processes, and watching TV. Another factor thought to be related to empathy is the duration of internet use. For example, Sezgin (2020) found a negatively significant relationship between excessive internet use and empathy skills of adolescents aged 14-18. Some other studies involving different age groups also support this finding (Çelik, 2014; Siyez, 2014). Therefore, it can be concluded that there is a negative relationship between daily internet use and TV watching time and students' empathy scores. In the current study, the effects of the students' empathy scores were examined, and besides the educational activities, their daily internet use and TV watching durations were also included in the analysis.

Another factor that is thought to have an effect on students' empathy scores is the number of fictional books such as novels and stories read by the students. Reading is a process that begins with infancy. Books that are read aloud by parents activate the frontal region of the brain and improve the language and cognitive skills of their babies (Metin & Gökçay, 2014). The books read by their mothers to children aged 41 to 65 months have been shown to improve children's empathy skills (Aram & Shapira, 2012). In addition, a connection was found between the emotional vocabulary of middle and high school students and their reading habits (Dylman, et al., 2020). Thus, it can be said that reading plays a role in empathy. Studies that have found a positive relationship between reading novels and high empathy skills also confirm this conclusion (Bal &Veltkamp, 2013; Johnson, 2012; Koopman, 2016; Stansfield & Bunce, 2014). A limited number of studies that examined the effects of both reading and watching TV on social behaviors (Turner, 2017) have found that those who prefer to read books are more sensitive to the feelings of others and have stronger empathy with them, but those who prefer watching TV remain insensitive to others’ feelings.

In Turkey, empathy skills have been studied especially in terms of gender, class, and education level of parents (Boran, et al., 2019; Coşkun, 2004; Dinçyürek, 2004; Duru, 2002; Genç & Kafalat, 2010; Güven, 2018; Öztürk, 2019; Savaş, 2018; Salı, 2017; Temizyürek, 2019; Tozoğlu, et al., 2020; Yontar & Yel, 2018). However, there is a limited number of studies examining the relationship between empathy skills and reading (Akyüz, 2013; Yurttaş & Avşar, 2020), and between empathy skills and internet use (Çelik, 2014; Sezgin, 2020; Siyez, 2014). In addition, schools in Turkey demonstrate a clustered distribution. Secondary schools are located in cities, small towns, and villages. Those in the cities and towns are of two different types, normal secondary school and imam hatip (theological) secondary school. For this reason, students' empathy scores may vary by student characteristics (reading books, watching TV, using the internet and gender), as well as by school characteristics (city centers versus small towns, secondary schools versus imam hatip secondary schools). The Hierarchical Linear Model (HLM), which is suitable for the analysis of hierarchical data such as student and school level, provides a clear framework for making accurate estimations of this

type of data (Draper, 1995; Raudenbush & Bryk, 2002). In the relevant literature, no study has been found that examines students' empathy scores using this model.

HLM is a more extensive version of regression methods. This model is very important as it is applied to data with a clustered structure and better reflects cause and effect relationships. In the statistical analysis of data having a clustered structure, multi-stage models are more suited (Moerbeek, et al., 2003). Besides, HLM distinctively explains the multi-level data structures of clustered data. As a result, the regression coefficients can be computed objectively (Raudenbush & Bryk, 2002). In accordance with the explanations, it is considered that this study is important in terms of revealing the level of correlation of empathy scores with variables considered at the student and school level by making estimates of students' empathy scores with fewer errors. On the other hand, it is expected that researchers who want to have information about this study, in which the empathy scores of students are examined at a multi-level with HLM, and future research, especially social studies education, will be given an example related to the study of HLM.Thus, the aim of the study is examining the empathy scores of secondary school students in terms of student- and school-level variables. In line with this broader purpose, answers were sought for the following specific sub-objectives:

1. Do students' empathy scores differ by the schools they attend?
2. Is there a relationship between students' empathy scores and gender, number of books they read annually, daily TV watching, and internet use?
3. Is there a relationship between the empathy scores of the students and the type of school (normal, IHO) and the location of the school (city and small town)?

Method

Research Design

The study was designed according to the correlational survey research model. According to Karasar (2011), correlational survey studies are carried out to reveal the relationships between variables and to find out any change. As such, this research design was preferred to determine whether the empathy scores of the students, which is the dependent variable of the study, are related to the selected variables both at the student and school level.

Study Group

The study group of the research was selected by simple random sampling. The study group consisted of 1010 eighth-grade students attending 29 public secondary schools in the city of Uşak, located in the midwest of Turkey, in the 2021-2022 academic year (See Table 1).

Table 1. Study Group (N=1010)

Variables	Categories	f	%
Gender	Female	544	53.9
	Male	466	46.1
Books read per year	One book	74	7.3
	Two books	24	2.4
	Four books	105	10.4
	12 books	392	38.8
	48 books	415	41.1
Daily internet use	Two hours or less	386	38.2
	Three hours and more	624	61.8
Daily TV viewing	Two hours or less	685	67.8
	Three hours and more	325	32.2
Type of schools	Normal secondary school	20	69.0
	İmam Hatip (İHO)	9	31.0
Location of schools	Major city center	19	65.5
	Small town center	10	34.5

Data Collection

The data were collected via Google Form, using the *Personal Information Form* and *Empathy Scale* developed by the researchers. The *Empathy Scale* developed by Gökalp and İnel (2021) for middle school students consists of one factor and 7 items. The items in the scale were scored in a 4-point Likert-type as "Does not fit me at all=1, Somewhat fits me=2, Quite fits me=3, Completely fits me=4". The Cronbach's alpha value was calculated to be .79 in the original version of the scale, and the model fit values (RMSEA=.045; SRMR=.03; CFI=.98; TLI=.97) were excellent according to Kline's criteria (2011). In the current study, the Cronbach alpha internal reliability coefficient was calculated to be .82. According to George and Mallery (2010), this value is in the range of $0.7 \leq \alpha < 0.9$, which is a good criterion value. In addition, model fit indices (RMSEA=.059; SRMR=.027; CFI=.97; TLI=.96) were calculated and the scale was found to be valid and reliable.

The Personal Information Form includes students' gender, number of books they read per year, daily internet use and daily TV viewing, which are also the student characteristics that are

discussed in the study. The school-level variables are the type of schools (Normal secondary schools, İHO) and location (major city center, small town).

Data Analysis

Two-level Hierarchical Linear Modeling was performed on the collected data to determine the relationship between students' empathy scores and variables at the student and school level.

One of the primary conditions for conducting HLM is having a sufficient sample size. Therefore, attention was paid to having the sample size of 30 x 30 suggested by Hox (2010) (30 different schools x 30 students = 900). Reaching 1010 students from 29 different schools indicates that this condition was satisfied. The data collected from 1010 students from 29 different schools via Google Form were downloaded as an Excel file, and then transferred to the SPSS 22 statistical package program. There was no missing data in the dataset as the online form required participants to answer all the questions. Then, the Z scores were calculated over the total scores. This calculation revealed that the Z scores were in the range of +3, -3, so it was decided that there was no extreme value in the scale.

For the research variables, two separate SPSS data sets were created as students (1st level), and school (2nd level) level. Among the student-level variables, gender (1 = male, 2 = female) is a classification-level variable, while duration of daily internet use (0 = 2 hours or less, 1 = 3 hours and more), duration of daily TV viewing (0 = 2 hours or less, 1 = 3 hours and more) and the number (ranging from 1 to 48) of books read per year (novels, stories excluding textbooks) are rank-level variables. Among the school-level variables, the location of the school were coded as 0 = small town, 1 = major city center, and the type of school were coded as 0 = imam hatip (theological), and 1 = normal secondary schools. Thus, the datasets were prepared for analysis in the HLM 8 student version.

Various models were used to achieve the sub-objectives of the research. For the first sub-objective of the study, one-way ANOVA model with random effects was used. The results obtained from this model show whether there is a change in students' empathy scores explained by Level 2 (Hox, 2010; Raudenbush and Bryk, 2002; Snjders and Bosker, 1999). For this, the “significance of the Chi-Square test” and the “Design Effect” were examined. The formula “DE = 1 + p (ñ-1)” was used for the design effect, and the design effect was expected to be greater than 1 (Hox, 2010). The “Regression Model with Random Coefficients” was used for the second sub-objective of the research, and “Regression Model with Means of Results” for the third sub-objective. Then, the τ_{00} and σ2 estimates obtained from the second and third models were compared with the τ_{00} and σ2 estimates of the first model, thus the reduction rate of variances at the student and school level was calculated. Finally, the reliability estimates were calculated for each model, and the representative power of the

selected sample was shown. The results were reported with reference to the tables suggested by Raudenbush and Bryk (2002). The minimum (p<.05) was taken as the basis for the significance level of all the statistics.

Ethical

In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. Ethical Review Board Name: Uşak University Ethics Committee Date of Ethics Evaluation Decision: 13.01.2022. (Ethics Assessment Document Issue Number: 01/2022-07)

Results

Results Regarding the First Sub-Objective

The random effect one-way ANOVA model was used to determine whether the empathy scores of the students, which is the first sub-objective of the study, differed by the schools they attend. The model combined with the 1st and 2nd level models for the analysis is shown, and then the findings are given in Table 2.

Level-1 Model

$EMPATHY_{ij} = \beta_{0j} + r_{ij}$

Level-2 Model

$\beta_{0j} = \gamma_{00} + u_{0j}$

Mixed Model

$EMPATHY_{ij} = \gamma_{00} + u_{0j} + r_{ij}$

Table 2. Results for One-Way ANOVA With Random Effects Model

Fixed Effect		**Coefficient**	**se**	***p***
Intrcpt2, γ_{00}		20.00	0.41	<0.001
Random Effect	Variance Component	df	$\chi 2$	*p*
Intrcpt1, u_{0j}	4.55	28	236.50	<0.001
Level-1 effect r_{ij}	18.77			

Note: *p*=<.05

Examining Table 2, it is observed that the students' mean empathy score is 20.00, and the Chi-square test is statistically significant ($\chi^2_{(29)}$=236.50, *p*<.05), which shows that there is a significant difference between the empathy scores of the schools. According to the calculated variance value,

20% of this difference is due to schools [(τ_{00} / (σ^2 + τ_{00}) = 4.55 / (18.77 + 4.55) = 0.20)], and 80% of the variance in empathy scores is due to student characteristics [(σ^2 / (σ^2 + τ_{00}) = 18.77 / (18.77 + 4.55) = 0.80)].

In addition, the value obtained as 0.20 is the inter-school correlation coefficient (p). Thus, the design effect was calculated as 1 + 0.20 (1010 / 29-1) = 8.21 using the formula 1 + p(ñ-1). Since the result is 8.21>1, the data set is suitable for multilevel models. Finally, the reliability was estimated to be .89, which shows that the sample averages are reliable indicators of the real school averages. In other words, it can be said that the selected sample represents the universe.

Results Regarding the Second Sub-Objective

A random coefficient regression model was used to determine whether there is a relationship between students' empathy scores, which is the second sub-objective of the study, and gender, number of books read per year, daily TV watching and internet use. The model combined with the 1st and 2nd level models for the analysis is shown, and then the findings are given in Table 3.

Level-1 Model

$$EMPATHY_{ij} = \beta_{0j} + \beta_{1j}*(GENDER_{ij}) + \beta_{2j}*(INTERNET_{ij}) + \beta_{3j}*(TV_{ij}) + \beta_{4j}*(BOOK_{ij}) + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + u_{0j}$$
$$\beta_{1j} = \gamma_{10}$$
$$\beta_{2j} = \gamma_{20}$$
$$\beta_{3j} = \gamma_{30}$$
$$\beta_{4j} = \gamma_{40}$$

Mixed Model

$$EMPATHY_{ij} = \gamma_{00} + \gamma_{10}*GENDER_{ij} + \gamma_{20}*INTERNET_{ij} + \gamma_{30}*TV_{ij} + \gamma_{40}*BOOK_{ij} + u_{0j} + r_{ij}$$

Table 3. Results for Random Coefficient Regression Model

Fixed Effect		**Coefficient**	**se**	**df**	***p***
Intrcpt2, γ_{00}		17.09	0.77	28	<0.001
Gender, γ_{10}		1.89	0.35	977	<0.001
Internet, γ_{20}		-0.60	0.26	977	0.020
TV, γ_{30}		-0.08	0.29	977	0.758
Book, γ_{40}		0.06	0.01	977	0.028
Random Effect	Variance Component	sd	df	$\chi 2$	*p*

Intrcpt1, u_{0j}	4.36	2.08	28	240.09	<0.001
Level-1 effect, r_{ij}	17.61	4.19			

Note: *p*=<.05

Looking at Table 3, it can be seen that the Chi-square test is statistically significant ($\chi2(28)=240.09$, $p<.05$), and the students' mean empathy score is 17.09. There is a positive and significant relationship between students' empathy scores by gender, which is one of the variables (Gender, $\gamma_{10}= 1.89$, $p<.05$). This finding indicates that gender plays a role in empathy scores, and shows that female students have higher empathy scores than male students. Another variable that has a positive and significant relationship with students' empathy scores is the number of books students read annually (Book, $\gamma_{40}= 0.06$, $p<.05$). This finding indicates that the number of books read is a variable that differentiates empathy scores, and reveals that as the number of books read by students increases, their empathy scores do as well.

There is a negative significant correlation between students' empathy scores by the daily time spent on the internet (Internet, $\gamma_{20}= -0.60$, $p<.05$). This finding indicates that the duration of daily internet use is a variable that affects the empathy scores, and it shows that those who use the internet for 3 hours or more a day have a lower empathy score than those who use the internet for 2 hours or less. Although there is a negative relationship between students' empathy scores depending on their daily TV watching time, this relationship is not significant (TV, $\gamma_{30}= -0.08$, $p>.05$). This finding shows that watching TV for less than 2 hours or for more than 3 hours does not make a significant difference on the empathy scores.

To see the decrease rate of variance at the student level, the σ2 estimates from Model 1 and Model 2 were compared [($\sigma2_{\text{One-Way ANOVA With Random Effects Model}} - \sigma2_{\text{Random Coefficient Regression Model}}$) / $\sigma2_{\text{One-Way ANOVA With Random Effects Model}}$ = (18.77 – 17.61) / 18.77 = 0.06)]. Accordingly, the variables at the student level (Level 1) explain 6% of the variance in students' empathy scores. The reliability estimate was calculated to be .89.

Results Regarding the Third Sub-Objective

To find out any a relationship between the empathy scores of the students and the type and location of the school, the regression model, in which the results are averages, was used. The model combined with the 1st and 2nd level models for the analysis is shown, and then the findings are given in Table 4.

Level-1 Model

$$EMPATHY_{ij} = \beta_{0j} + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(LOCATION_j) + \gamma_{02}*(SCHOOLTYPE_j) + u_{0j}$$

Mixed Model

$$EMPATHY_{ij} = \gamma_{00} + \gamma_{01}*LOCATION_j + \gamma_{02}*SCHOOLTYPE_j + u_{0j} + r_{ij}$$

Table 4. Results for Means as Outcomes Regression Model

Fixed Effect		**Coefficient**	**se**	**t**	***p***
For Intrcpt1, β_0					
Intrcpt2, γ_{00}		19.3	0.56	34.74	<0.001
Location, γ_{01}		1.9	0.66	2.91	0.007
SchoolType, γ_{02}		0.8	0.76	-1.03	0.311
Random Effect	Variance Component	sd	df	$\chi2$	*p*
Intrcpt1, u_{0j}	4.09	1.25	26	201.81	<0.001
Level-1 effect, r_{ij}	18.77	3.52			

Note: *p*=<.05

When Table 4 is examined, it is observed that the Chi-square test is statistically significant ($\chi^2_{(26)=}$201.81, *p*<.05), and the average empathy score of the students is 19.3. There is a significant positive correlation between the school location variable and empathy scores (Location, γ_{01}= 1.9, *p*<.05), which indicates that secondary schools located in major city centers have higher empathy scores than those located in small towns. No significant relationship could be identified between school type and empathy scores (School Type, γ_{02} = 0.8, *p*>.05). This finding reveals that school's being a normal or imam hatip school is not a factor that significantly affects the empathy scores.

To see the reduction rate of variance at school level, τ_{00} estimates obtained from the random-effects one-way ANOVA model and the regression model were compared [($\tau_{00\ \text{One-Way ANOVA With Random Effects Model}}$ - $\tau_{00\ \text{Means as Outcomes Regression Model}}$) / $\tau_{00\ \text{One-Way ANOVA With Random Effects Model}}$ = (4.55 – 4.09) / 4.55 = 0.11)], which shows that 11% of the variance at the school level is explained. In addition, the reliability estimate was calculated to be .88.

Discussion

In this study, the empathy scores of eighth-grade secondary school students were examined in terms of variables at the student and school levels. First of all, the empathy scores of the students in the sample were observed to differ by the schools they studied at. The source of the change in students' empathy scores is the school-level variables with a rate of 20%, while student characteristics accounted for the remaining 80%. Therefore, it was concluded that most of the changes in the empathy scores of the students in the sample were due to student characteristics.

There is a positive and significant relationship between gender and students' empathy scores, and female students had higher empathy scores than male students. Similar research has reported that empathy scores differ in favor of girls (Boran, et al., 2019; Çelik, 2014; Duru, 2002; Güven, 2018; Öztürk, 2019; Salı, 2017; Savaş, 2018; Sezgin, 2020; Temizyürek, 2019; Yontar & Yel, 2018). However, a few studies have reported that the gender variable is not a factor that significantly differentiates the empathy scores of the participants (Coşkun, 2004; Dinçyürek, 2004; Genç & Kafalat, 2010; Tozoğlu, et al., 2020). Thus, it can be said that the findings of the current study are generally in line with the results of the previous studies in the relevant literature.

Considering the student characteristics, although the daily TV-viewing time was negatively related to the students' empathy scores, as expected, the students' daily TV viewing for 2 hours or less or 3 hours or more did not have an effect that would significantly change their empathy scores. However, the expected negative significant relationship was observed between the time devoted to daily internet use and empathy scores. As the daily internet use of the students increased, their empathy scores decreased. Moreover, those who used the internet for 3 hours or more per day had lower empathy scores than those who used it for 2 hours or less. This finding explains to some extent why BTK, which is the institution responsible for the healthy and effective use of ICT in Turkey, recommends 2 or 3 hours of internet use for students in the 10-14 age group. In addition, there is a negative significant relationship between excessive internet use and empathic tendency levels of students aged 14-18 in Turkey (Sezgin, 2020), and similar findings were found in another study in which university students formed the study group (Siyez, 2014). In addition, Çelik (2014), who conducted research on a similar age group, reported that those who spend less time online have higher empathy scores than those who spend more time online.

The findings on the relationship between empathy and internet use are supported by another study conducted on an international scale. Chopik et al. (2017) examined the relationship between internet use and empathy in 63 countries, including Turkey, and found a significant negative relationship between them ($r_{(60)} = -.31$, $p = .02$). The empathy scores were also observed to be lower in places where internet use was high. Therefore, this relationship between internet use and empathy can be described as a global phenomenon experienced similarly around the world.

A positive and significant relationship was also found between the number of books read in a year and the empathy scores of the students. The more the number of books read, the higher was the empathy score. Although some studies have found no relationship between empathy and reading habits (Akyüz, 2013; Yurttaş & Avşar, 2020), the finding of the current study is supported by studies reporting a positive and significant relationship between empathy and reading novels (Bal & Veltkamp, 2013; Johnson, 2012; Koopman, 2016; Stansfield & Bunce, 2014). In addition, considering that those who read books have stronger empathy towards others (Turner, 2017), the number of books

read by the students in the sample can be considered as a factor that positively increases their empathy scores.

It was further observed that there was no significant relationship between the type of school, which is one of the school level variables, and empathy scores. Unlike other secondary schools, compulsory religious courses such as the Holy Quran and Arabic are given in imam hatip (theological) secondary schools in Turkey. However, in both secondary schools, the basic courses such as Turkish and Social Studies, aiming to foster empathy skills, are commonly taught as core courses and the same curriculum is applied (Ministry of National Education [MEB], 2018a; 2018b). The fact that the secondary schools in the sample were normal or imam hatip did not significantly affect the empathy scores of the students, which can be explained by the fact that the basic courses taught in both secondary schools are common. However, since no other research on this subject has been identified in the literature review, it is difficult to confirm this conclusion.

Under the school location variable, the secondary schools were analyzed at two levels as those located in a major city or a small town. A positive and significant relationship was found between the location of the school and empathy scores. It was concluded that secondary schools located in city centers have higher empathy scores than those located in small towns. No research has been found that examines the empathy scores of secondary school students based on the location of the schools (cities and small towns). However, Çoşkun (2004), who examined the empathy skills of university students according to the place of residence, could not identify any significant differences between the empathy scores of those living in a big city ($\bar{X}$ = 141.7) and those living in a small town ($\bar{X}$ = 139.1). In another study, Topdemir (2009), who discussed the empathy scores of teachers according to the settlement where they completed their primary education, reported that the empathy scores of those who completed their primary education in rural ($\bar{X}$ = 118.8) and urban ($\bar{X}$ = 125.4) places did not differ significantly (p =.47). As can be seen, the average of empathy scores of individuals living in a urban area/city or completing primary education is higher than those in rural area/town, though not significantly. Therefore, the results reported by the related research are not supported by the results in the current study.

Implications, Limitations, and Suggestions

In this study, the variables of the empathy scores of secondary school students at student and school level were examined using the Hierarchical Linear Model. It can be said that the current study has an exploratory nature, since there is no previous study in the related literature that examines empathy scores both by using this analysis technique and in terms of the variables (especially school-level variables) included.

With the rapid advancements in science and technology, the roles expected from individuals have also changed. The curriculum in Turkey has also been affected by these advancements and has been revised. This advancements has defined an individual who can solve problems, think critically, communicate effectively, and empathy with others. In connection with educating individuals with these qualities, the curriculum have been prepared in a value and skill-oriented, simple structure, taking into account individual differences. Teachers were also expected to teach students the values and skills in the curriculum, taking into account individual and developmental differences and environmental conditions (MEB, 2018c).

In this context, it is very important for teachers to be aware of the characteristics of both their students and the schools they work in. Another important consideration is which factors affect the skill or value that is expected to be acquired. In this study, gender, daily internet use time and the number of books read in a year were determined as variables that significantly affect students' empathy scores. It has also been determined that schools in the city center had better empathy scores than those in small towns, based on the school's location, which is one of the variables analyzed at the school level. These factors also explained some of the changes in students' empathy scores. Based on this, teachers can prepare lesson plans based on the factors that affect empathy skills and they teach this skill more effectively by knowing the factors that affect empathy skills.

The variables in the study, especially at the school level, are limited and at the macro level. In this respect, the research is limited. In addition, the variables at the student and school level determined in the study fail to explain a large part of the changes in students' empathy scores (6% of the changes at the student level and 11% at the school level are explained). It can be said that the selected factors are important and empathy, with its various multiple components, dimensions and deep theoretical structure (Feshbach, 1975; Hoffman, 2000), is a highly complex concept (Dökmen, 2008). Thus, besides the factors selected in the current study, different factors can be included in further analyses, and studies aiming at the relationship of students' empathy scores with the same sample or different samples can be planned. Thus, it can contribute to both understanding the changes in students' empathy scores and eliminating the shortcomings in the relevant literature.

The results regarding the decrease in the empathy scores of the students as their internet use increases and the increase in the empathy scores as the number of books they read increases are considered important because empathy does not only contribute to the development of communication skills but also helps successful development of friendships (Özbek, 2002). So, the question of whether online technologies make us more or less sociable asked by Waytz and Gray (2018) can be made more specific, as “Do internet-based technologies used for socializing undermine empathy, which is a social skill?” To be able to answer this question, experimental studies can be carried out to test the relationship between empathy and internet use. A similar empirical study can also be conducted about

the effect of the number of books read on empathy skills. Ultimately, this study is relationship-based and it is difficult to say that it reveals the cause-effect links between the variables. However, there are some clear relationships identified between empathy and the variables in question. As such, informative seminars can be given to teachers, families and students regarding responsible internet use. Both teachers and families can encourage students to read books instead of spending too much time online.

Conclusion

This study revealed that the empathy scores of the students in the sample differ both by the student characteristics and the characteristics of the school they are studying at. Of the student characteristics, gender, daily internet use time and the number of books read in a year were determined to be related to empathy scores, but daily TV watching time was not. Based on this, it is possible to say that gender, daily internet use time and the number of books read are factors that have an important impact on students' empathy scores. On the other hand, the fact that secondary schools are normal secondary schools or imam hatip did not cause an important difference in the empathy scores, but it can be said that schools located in city centers have higher and differentiates empathy scores than those at schools located in small towns. At this stage, research can be undertaken on the socioeconomic opportunities, administrative structure of the secondary schools located in the city centers and small towns, and how the teachers working in secondary schools follow a path in the teaching of empathy skills. And it will also be useful to know whether these studies have an effect on empathy scores.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Pre-Service Teachers' Evaluations of Creativity in Higher Education

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Abstract

Creativity is recognized as an integral skill of the 21st century. For this reason, it is important for educators to learn how to nurture their students' creativity and find means of evoking it in the classroom. It is believed that creativity, a trademark of this age of innovation, can be developed with a suitable educational environment and can be taught when appropriate conditions are provided. The role and importance of universities, especially faculties of education, which elicit the development and application of new ideas, cannot be denied. This study aimed to help pre-service teachers define creativity and evaluate their undergraduate education processes in terms of gaining and using creativity-based skills. In accordance with the nature of the qualitative research, the study group of the research was selected using a random sampling strategy. The study group of the research consisted of 197 pre-service teachers being educated in the faculty of education of a state university in their final year. The data collected and entered into the online data collection form was acquired using content analysis.

Keywords: Creativity, Higher Education, Preservice Teachers

DOI: 10.29329/epasr.2022.248.4

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Introduction

What is creativity? Who is a creative person? What characteristics does a creative person have? What are the factors that drive people to be creative? Can individuals be creative through education? Can creativity be developed or taught? These questions, which were in the literature for many years, were answered differently by many researchers in many fields and will continue to be answered.

Creativity comes from the root "creare" which means "to make, give birth, create, produce" in Latin. Efforts to systematically conduct scientific research on creativity and define creativity began in the mid-19th century (Andreasen, 2013). Creativity is a "complex" phenomenon that is "indefinable" (Yavuzer, 1989). San (2001) defines creativity as an ability that exists in every individual and can be found in every part of human life, as a whole of processes, an attitude and behavior style covering a wide area from daily life to scientific studies. According to Kırışoğlu (2002), creativity is the product of a multidimensional thinking mind; it is problem-solving according to Costello (2000) and Wakefield (1992). While Özerbaş (2011) defines the creativity as going out of the ordinary, exploring new ways, looking at life from different perspectives, being curious about the unknown, breaking the imposed line of thought and revealing a new line of thinking, finding different alternative solutions for a specific problem, going off the path followed by others, finding something new that leads to other things, establishing a new relationship or relating to existing thoughts, presenting a new idea, inventing a new technique or method or making additions, Torrance defines the creativity in the form of "sensitivity to problems, disorders, lack of information, missing items, incompatibility, identifying difficulty, seeking solutions, making predictions or developing hypotheses about deficiencies, changing or re-testing these experiments, and then communicating the result to others" (as cited in San, 2001). As can be understood from the definitions, creativity is one of the concepts that contains a wide meaning integrity that cannot be handled unilaterally and has a very important place for the individual regardless of the field.

The creative person, the mental process related to creativity, the characteristics of the environment in which creativity takes place and the creative product that emerges as a result of all these processes constitute the definitions of creativity (Özaşkın & Bacanak, 2016). Craft (2003), in his classification, deals the creativity with the dimensions of the person, qualities and character of the person, creative process, creative product types and social context in which creative action takes place.

Creativity is also among the skills of the 21st-century skills. 21st-century skills refer to the skill sets that individuals living in the information age must carry and continuously develop in order to be effective and qualified. It is seen that in the attempts of P21 (Partnership for 21st Century Learning - Partnership for 21st Century Skills), EnGauge, North Central Regional Educational Laboratory

(NCREL), ATCS (Assessment and Teaching of 21st Century Skills), ISTE (International Society for Technology in Education), European Union (EU) and OECD to classify century skills, the creativity has an important place (Boyacı & Özer, 2019). Creativity is accepted as the basis of these skills in higher education as in all educational levels. Creativity is seen as an important dimension in the development of students' knowledge and skills of the content in research and collaboration, in the integration and synthesis, as well as in ensuring cultural continuity (Craft, Jeffrey, & Leibling, 2001; Livingston, 2010).

In today's society, it is extremely important to allow creative industries to use the intellectual and creative imagination rather than to question the economy and power more critically and openly. Creative industries create the information society (Freeman, 2006). Higher education has adapted to the information society in the 21st century and has reached a crucial point in local and global dimensions with its function in raising educated people (Sakınç & Aybarç-Bursalıoğlu, 2012). Unlike the other century, the 21st century included individuals in the higher education process (Ergün, 2011). In this context, universities have become the leading educational institutions that shape society's scientific, economic, technological, social, and cultural development. University is the institution that undertakes to produce and disseminate knowledge that will be universally accepted in all branches of knowledge (Bolay, 2011). Tuchman (2009) defines universities as the city of ideas.

The role of faculties in higher education varies according to their and the discipline they train. For this reason, it is seen that the mission of education faculties is more critical than other faculties. Education faculties, which aim to educate the pre-service teachers in the best way, have to follow the change and all the innovation efforts developing in the world in order to fulfill this task they undertake. Contemporary, innovative, critical thinking and creative pre-service teachers will undoubtedly raise individuals who are beneficial to society with these virtues they gain when they start their teaching life. For this reason, the definition of creativity in this study was carried out with pre-service teachers who were continuing their education in the education faculty. It is thought that the creativity skill, which has become a more important concept day by day with the fast developing innovative age, can be improved with an appropriate educational environment (Fryer, 2006). In this context, it was aimed that pre-service teachers, as future teachers, define creativity and evaluate their undergraduate education processes to gain and use creativity skills. The following questions were asked in this research:

- How do pre-service teachers define creativity?
- What are the opinions of the pre-service teachers about whether the lectures have an effect on creativity when they consider their undergraduate education?

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- What are the pre-service teachers' views on whether the instructors are creative or not?
- How do the pre-service teachers evaluate their own creativity?
- What are the suggestions of pre-service teachers for revealing and developing creativity in higher education?

Method

Design of the Study

In this study, it is aimed to reveal and explore the opinions of pre-service teachers, who are in the last years of their pre-service education, on the concept of creativity. The problem is addressed with the interpretative paradigm in order to achieve the purpose of the study and to find answers to research questions. This perspective leads researchers to qualitative research. Merriam (2013) states that all qualitative research is about how meaning is constructed and how people make sense of their lives and worlds, but the primary purpose of basic qualitative research is to reveal these meanings. In this study, the basic qualitative research design was chosen as the design because it is aimed to reveal how the pre-service teachers define creativity, how they evaluate the higher education process in terms of creativity, and their suggestions about applications that will reveal or improve their creativity.

It is not intended to make an in-depth examination in the study. It was aimed to explore the pre-service teachers' definitions of creativity, their views and suggestions on creativity in higher education from a broader perspective. In other words, this study is *a study which is in seeking breadth* (Patton, 2014). Its pursuit of breadth does not mean that it is aiming to generalize. The aim is not to generalize but to present a broad interpretation.

Study Group

In accordance with the nature of the qualitative research, the study group of the research was selected using a random sampling strategy from purposeful sampling techniques. Since the aim of the study is to reveal a wide range of interpretations, it was tried to reach pre-service teachers studying in different branches as much as possible. In addition, since it was aimed to evaluate the higher education process in terms of creativity and to reveal their suggestions for this process, only pre-service teachers who were at the end of the higher education process were studied. The online data collection form prepared in this direction was sent to the class representatives after obtaining the necessary permissions. 197 pre-service teachers answered the data collection form in full. 54 of these pre-service teachers are studying in science education, 53 in pre-school education, 69 in primary education and 21 in Turkish Language education departments.

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Data Collection Process

Considering the effort to be spent in the data collection process, it was taken into the center that the research was seeking breadth, so data was collected through a form consisting of open-ended questions. In the data collection form, a question about the definition of creativity in order to reveal the definitions of creativity by pre-service teachers and questions that allow them to evaluate themselves as the components of higher education, lecturers and students were included in order to evaluate the higher education process in terms of creativity. There were also questions to determine what pre-service teachers suggest to reveal and develop creativity in higher education. The form prepared by the researchers was answered by the third-grade pre-service teachers in order to test the comprehensibility of the questions. The final form was made online in accordance with remote data collection, and with the necessary permissions, a research link was sent to the fourth-grade student representatives through the lecturers of the pre-service teachers.

Data Analysis Process

The data obtained in the study were analyzed using an inductive method; therefore, content analysis was used to analyze the data in the study. First of all, the forms obtained online were grouped according to the branches and individual code names were given. Those whose code names were between ÖA001 - ÖA054 were pre-service science teachers, those between ÖA055 - ÖA107 were pre-service pre-school teachers, those between ÖA108 - ÖA176 were pre-service primary teachers, and those between ÖA177 - ÖA197 were pre-service Turkish language teachers. Then, according to the aims of the study, the answers given to the questions in the forms were divided into three groups. In the first group, there were definitions of creativity, in the second group, the evaluation of the higher education process in terms of creativity, and in the last group, the answers given to the questions aiming to reveal their suggestions for creativity in the higher education process. The answers they gave to the questions in each group were arranged on Microsoft Excel. According to the researchers, the words or word groups found to be meaningful were selected and coded. Then, categories were created with those who thought they are related to each other within the obtained codes.

Consistency and Credibility

It can be said that declaring the scientificness of the study, in other words, that the results obtained are based on facts and are compatible with the real ones, is one of the tasks that researchers must fulfill. In qualitative research, whether the results match the reality or not, the concept of credibility, the fact that they are based on facts, in other words, consistency of the results with the collected data is expressed with the concept of consistency. Qualitative researchers have stated that there are many techniques to fulfill consistency and credibility (Merriam, 2013; Patton, 2014). The peer review/examination, audit trail and rich, thick descriptions techniques were used in this study. Peer review is the negotiation and discussion of the findings with colleagues. In this regard, the data

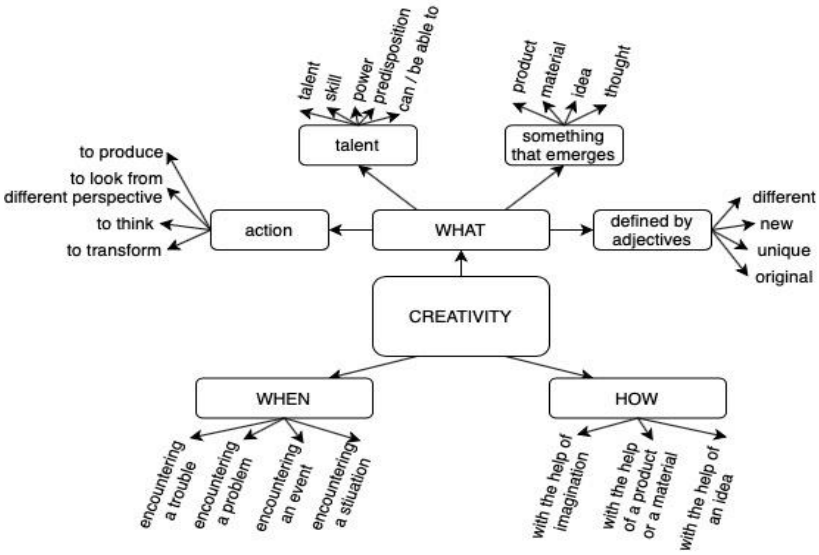
analysis was carried out only by the first author, and discussions were made with the second author about the findings. For the audit trail technique, the analysis process was carried out by supervising with an analyst log. Finally, while presenting the findings, it was tried to present rich descriptions, that is, citations for the categories obtained.

Results

In the study, it was aimed to reveal how pre-service teachers define creativity, how they evaluate creativity in terms of courses, lecturers and themselves in the process of higher education, and what their suggestions are about practices that will reveal or improve their creativity. The findings obtained in the study designed for this purpose are discussed under three main headings depending on the research questions.

Pre-service Teachers' Definitions of Creativity

When the pre-service teachers were asked how they define creativity, it was seen that codes and categories related to three different situations were formed in their answers. These situations contain answers about how creativity is defined, when creativity emerges and how creativity emerges. In the explanations about how creativity is defined, the pre-service teachers defined creativity as action, talent, and something emerged and associated it with some adjectives. Regarding when creativity occurs, they stated that creativity emerges in response to a problem, a problem or a situation, an event, or a subject. A small number of pre-service teachers stated that creativity emerges with the help of opinions, ideas, products or materials. The codes and categories obtained from the answers given by the pre-service teachers to the question of how do you define creativity is



summarized in

Figure 1.

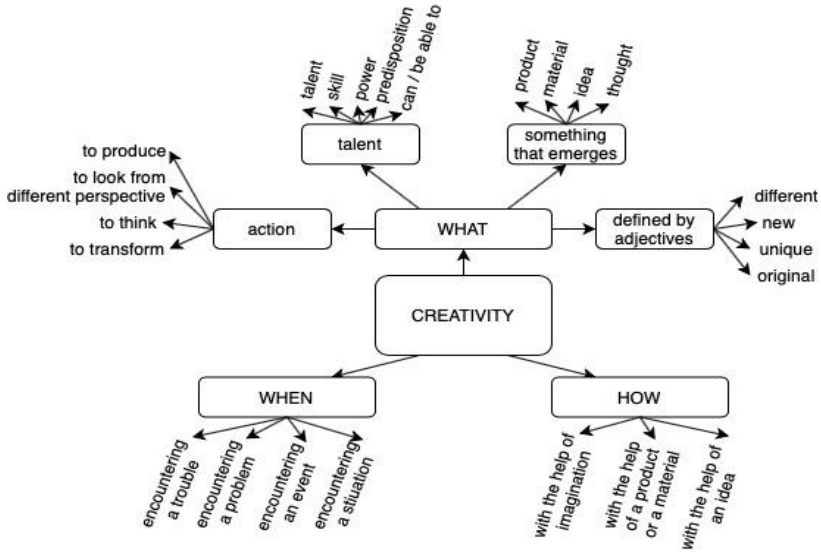


Figure 1. Pre-service teachers' definitions of creativity

Creativity Definitions

Creativity Is Action: When the answers about how creativity is defined are handled, it was seen that more than half of the pre-service teachers define creativity as an action such as producing, looking from a different perspective, transforming and thinking in their answers. The most uttered action by pre-service teachers was to produce. It was understood that while some of the pre-service teachers use the expression to produce openly, some of them talk about the act of producing with expressions such as revealing, discovering, generating, creating, finding, presenting, developing, obtaining. For example, the 'to bring out' expression in the statement of the pre-service pre-school teacher with code ÖA060 of *"Creativity is to bring out original ideas, projects"* was considered synonymous with 'to produce'. It was thought that the verb 'to present an idea' in the statement of pre-service Turkish language teacher with code ÖA188's statement of *"To present a different idea in relation to an event, situation, subject etc."* has the same meaning as producing an idea. Similarly, the verb 'to create an opinion' in the statement of the pre-service primary teacher ÖA174 of *"It is to create a different original product or opinion.."*. was considered as producing an opinion. As seen in these examples, the pre-service teachers mentioned in their answers about producing ideas, products, projects and opinions as well as producing solutions, things, thoughts, materials, and information.

Another action where pre-service teachers define creativity was to look from a different perspective. The act of looking from a different perspective was used in two different ways: to be different from other people and to look from a different angle. The answer of the pre-service pre-school teacher ÖA096 about being different is as follows: *"To see what no one sees, to think that s/he does not think, to try to do what s/he does not while looking at the same point in a community."*

Regarding the act of looking from a different perspective, the pre-service pre-school teacher ÖA093 expressed his/her opinion with the words *"to make the fish fly, to make the bird swim, that is to see the beyond what exist"*, while the pre-service primary teacher ÖA110 used the expression of *"To use an object differently than its classical use or to design it for use."*

The act of thinking was another action that pre-service teachers mentioned in their definition of creativity. Regarding the act of thinking mentioned by a small number of pre-service teachers, the answers of *"Thinking as broadly as you can"* by the pre-service primary teacher *ÖA152*, and *"To think actively and constantly."* by another pre-service primary teacher ÖA163 or "thinking with imagination." by the pre-service pre-school teacher ÖA077 can be given as examples.

A small number of the pre-service teachers participating in the study mentioned the actions interpreted as transforming in their answers. To add, add something from yourself, add richness, improve or bring forth are actions that were evaluated under the category of transforming actions. For example, the answer of the pre-service pre-school teacher ÖA092 of *"Developing existing ideas in a more comprehensive and different way."* was covered under the category of transforming. The answer of another pre-service pre-school teacher ÖA058 of *"Turning things into opportunities is making things useful by using them outside of their intended use"* was among the answers evaluated under the category of transforming. The code of 'to add' in the answer of the pre-service primary teacher ÖA158 of *"To create something that does not exist or to add on top of what is."* was interpreted under the category of transforming.

Creativity Is a Talent: Nearly half of the pre-service teachers participating in the study expressed creativity as talent, skill, power and predisposition. For example, it was understood that pre-service science teachers ÖA047 and ÖA051 defined creativity as a predisposition with the words of *"... a predisposition driving to create something from within ..."* and *"It is a person's predisposition to create new things by using different methods"* so they defined creativity as a predisposition. The pre-service primary teacher ÖA141 expressed creativity as a power with the expression of *"Creativity is the imagination of a person"*. Another pre-service primary teacher ÖA130 defined creativity as power in his/her expression: *"Creativity is the power that enables people to produce new ideas."* In addition to these, pre-service teachers have mentioned talent and skills expressions. Thinking skill (ÖA64, ÖA106, PT108), producing skill (ÖA027, ÖA057), reasoning skill (ÖA022, ÖA125), extrapolating skill (ÖA019), imagining skill (ÖA012), solving skill (ÖA006), ability to reveal (ÖA002) were examples that pre-service teachers defined creativity as a skill. The expressions in which the word ability was clearly used were as follows: *ability to build* (ÖA014), *ability to create* (ÖA041, ÖA120, ÖA129), *ability to produce* (ÖA030, ÖA194), *authenticity ability* (ÖA021), *imagination ability* (ÖA007), *ability to find a solution* (ÖA081).

Another group of expressions evaluated under the skill category was expressions that include the mode of competence such as can/be able to. The mode of competence, which means request, allow, possibility, also means the power to do a job. For this reason, the explanations that the pre-service teachers expressed in the qualification mode were also evaluated under the skill and ability category. As can be seen from the pre-service pre-school teacher ÖA068's expression of *"It is that individuals can solve emerging problems in an original way."*, it was thought that the competence mode relates to the power of analysis. The answer of the pre-service primary teacher ÖA161 of *"The art of looking and interpreting from another window"* can be given as an example.

In some of the answers evaluated under the skill category, the pre-service teachers stated that creativity exists in person or was innate. As it can be understood from pre-service science teacher ÖA022's expression of *"It is the capacity within individuals. I think it's based on a balance of reasoning skills and imagination."* or pre-service pre-school teacher ÖA056's expression of *"It is a mental ability that is innate in an individual and can be developed as much as environmental conditions and genetic differences allow."* that creativity exists in the individual.

Creativity Is Something That Emerges: Some of the pre-service teachers who tried to define creativity expressed creativity as an idea, product, thought, thing, material or situation in their definitions. For example, the pre-service Turkish language teacher ÖA189 has defined creativity as *"genius ideas."* Similarly, the pre-service primary teacher ÖA177's expression of *"Product, idea, thought created within the possibilities available."* can also be given as an example. Another classroom teacher ÖA142 defined creativity as follows: *"Everything that occurs as a result of the liberation of human imaginations, such as the vast space or the black hole we know to disappear in it."*

Creativity Is Defined by Adjectives: It was seen that more than half of the pre-service teachers participating in the study used adjectives such as unique, original, new, different, fast, subjective, rare, functional, practical, useful, broad in their creativity definitions. Among these adjectives, the most voiced adjective was the adjective different. 54 pre-service teachers used the adjective different in their answers. The pre-service teachers used the adjective different as being different, looking from different aspect, thinking different, applying different, using different, seeing different, making different, different perspective, different ways, different approach style, different idea, different product, different thinking. After the adjective different, the adjective that pre-service teachers most often express was the adjective new. The adjective new expressed by 29 pre-service teachers was stated as new idea, new product, new things, new phenomenon, new proposition, new knowledge, and new opportunity. Adjectives different and new were followed by adjectives unique and original. The adjective unique was mentioned 23 times and the adjective original 15 times. The

pre-service primary teacher ÖA176 used the adjective original as follows while defining creativity: *"Creating an original product or opinion that is very different from the usual product or opinion."*

Creativity Arises in Reply to Something: Some pre-service teachers also explained the situations in which creativity occurs in their answers. For example, they stated that creativity occurs when encountering a trouble or a problem. The answer of "*... I think it is mostly done to find a solution to a problem."* included in the description pre-service science teacher ÖA034 shows that pre-service teacher thinks that creativity arises when faced with a problem. It was thought that from the answer of "*Creativity is to solve a problem in a way that nobody solves."* of the pre-service primary teacher ÖA156, creativity arises against a problem. The pre-service teachers participating in the study included their statements about an event, situation and subject other than a trouble and a problem in their answers.

Creativity Arises with the help of a Something: It was observed that some of the pre-service teachers who participated in the study stated that creativity emerged with the help of something in their answers. For example, it was understood that from the answer of "*I think it is the ability to solve the encountered problem with a new product and a new idea."* of the pre-service science teacher ÖA006, the pre-service teacher thought that creativity emerges with the help of a product or an idea. It was seen that from the answer of *"To reveal the non-existent with existing thoughts, ideas or materials."* of the pre-service primary teacher ÖA117, the pre-service teacher defined creativity by using the expressions of the help of thoughts, ideas or materials. The pre-service science teacher ÖA043 defined creativity as with the help of imagination with the expression of *"Anything done using the imagination, including thinking."*

Pre-service Teachers' Evaluations of Creativity in the Higher Education Process

One of the study aims was to reveal pre-service teachers' evaluations about creativity in terms of various components in the higher education process. The components that the pre-service teachers were asked to evaluate were the courses in the higher education process, the lecturers and the students, that is, themselves. Categories and subcategories resulting from the answers given for all these components are given in Figure 2.

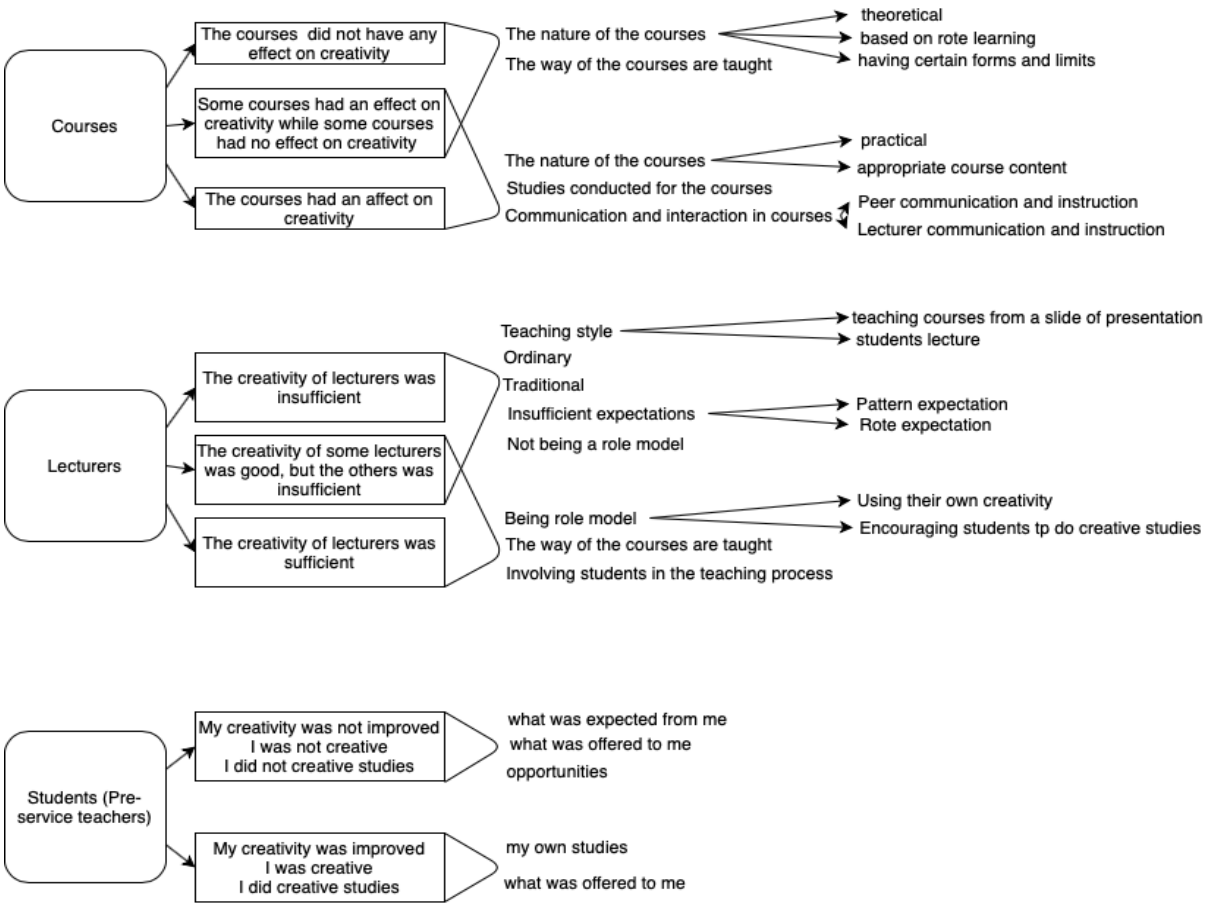


Figure 2. Pre-service teachers' evaluations of creativity in the higher education process

Pre-service Teachers' Evaluations on the Effects of the Courses Taken in the Higher Education Process on Their Creativity

When the answers of them to the question of "when you consider your undergraduate education, how do you evaluate whether the courses have an effect on creativity?" were analyzed, it was seen that the answers were grouped under four categories. In their answers, 14 pre-service teachers stated their opinions about creativity in general instead of their opinions about whether the courses in undergraduate education are effective or not. Therefore, the answers of these pre-service teachers were not included in the analysis. It was seen that the pre-service teachers mostly made an evaluation that some courses had an effect on creativity, while some courses had no effect on

creativity. Almost a third of the pre-service teachers defended the view that the courses have an effect on their creativity, while nearly a quarter of them claimed that the courses do not have any effect on creativity. A small number of pre-service teachers stated that the courses had a partial effect on creativity while making their evaluations. Some of the pre-service teachers who make their evaluations according to the above-mentioned categories, like the pre-service pre-school teacher ÖA093 *"It changes from course to lesson, while some support it, some dampen it"* or pre-service Turkish language teacher ÖA179 "*Of course, it is at a minimum level."* or like the pre-service primary teacher ÖA141 *"Obviously, courses have no effect on creativity."* explained their opinions about the effect of courses on creativity without making any explanation. However, they did not give any information about the reason for their statements. On the other hand, while some pre-service teachers were explaining their opinions, they also explained the reason for their opinion. These explanations were handled in detail and pre-service teachers asked why the courses in higher education are effective on creativity or why the reasons why they are not effective were revealed.

Reasons for Courses Being Evaluated as Ineffective on Creativity: When the explanations made by the pre-service teachers about the ineffectiveness of the courses in higher education on creativity, it was seen that two categories emerged. The first category named as the nature of the courses was formed from the opinions of the pre-service teachers about the courses being theoretical, based on rote learning and having certain forms and limits. For this opinions, the answer of the pre-service teacher ÖA171 of *"I did not see much benefit on creativity because theoretical courses were taken in general."* and of the pre-service science teacher ÖA048 *"... we take these courses with an education system based on rote-learning. I think rote learning dulls creativity."* can be given as an example. It was deduced that some pre-service teachers think that the courses do not have an effect on the development of creativity since they think that the courses do not have an effect on the development of creativity due to certain patterns and limits regarding the courses, like the pre-service science teacher ÖA037 said that *"... if we think that certain patterns and things to be done are determined in advance and we do the course work and homework for these, they dull creativity."*

The other category consisting of the answers of the pre-service teachers who stated that the courses had no effect on creativity was the category of the way of the courses are taught. In this category, there were opinions of pre-service teachers about presenting ready-made information and instructing teacher-centered. It was understood from the answer of the pre-service primary teacher ÖA135 of "*They have not much effect on it because most of the things are presented as ready-made information* ..." because there was ready-made information in the courses and from the answer of the pre-service pre-school teacher ÖA091 of *"They are not effective. Because the courses are taught teacher-centered."* because the courses were taught teacher-centered, they thought that the courses in undergraduate education had no effect on creativity.

Reasons for Courses Being Evaluated as Effective on Creativity: When the answers of the pre-service teachers about the effects of the courses on creativity were examined, it was seen that the reasons were grouped under three categories. The most common reason expressed by the pre-service teachers is about the studies conducted for the courses. They stated that the materials, presentations, activities, lesson plans, teaching practices, ideas, products, homework, works, studies and evaluations they prepared for the courses improve the creativity. The explanations of the pre-service Turkish language teacher ÖA187 of "*I made many presentations, evaluations and studies at the university. I think university is an important place for creativity.";* pre-service science teacher ÖA010 of "*We used our creativity in course plans, materials and activities we prepared."*; classroom pre-service teacher ÖA158 of *"We used our creativity in course plans, materials and activities we prepared."* can be given as an example.

The nature of the courses was another category that is formed based on the answers of pre-service teachers. Regarding the nature of the courses, the pre-service teachers stated that the practical courses, some course contents, the courses encouraging thinking and the nature of undergraduate education have an effect on creativity. Pre-service pre-school teacher ÖA067's statement of *"I think they improve creativity because they encourage thinking, researching and producing"* was one of the answers evaluated under this category. Regarding the contents of the course, the statement of the pre-service science teacher ÖA028 of "*Improving your creativity in some courses varies with the content and lecturer of the course*." can be given as an example. Another pre-service science teacher ÖA015 expressed his/her opinion on the nature of undergraduate education with the following words: "*While in my previous high school and middle school education, I was mostly pushed into certain thinking patterns, I had the opportunity to develop my own ideas in undergraduate education, which allowed me to develop my creativity."* In some of the answers evaluated under this category, the pre-service teachers directly gave the names of the courses and stated that the courses they gave their names had an effect on creativity. 7 teachers just like the pre-service Turkish language teacher ÖA194 mentioned the material designing course by expressing openly of "*Except for material designing and special teaching methods,"* none of the courses were beneficial for creativity. In addition to the special teaching methods course seen in the answer of ÖA194, teaching practice, teaching principles and methods and robotic coding courses were the courses that are thought to affect creativity by pre-service teachers. In addition, only pre-service science teachers stated that education courses and laboratory courses were also effective on creativity.

The last category about why courses were effective on creativity was communication and interaction in courses category. The answers evaluated under this category were considered as two subcategories. These subcategories were peer communication and interaction, and communication and interaction with the lecturer. The pre-service teachers stated that the ideas of their friends, the exchange of ideas with their friends and the work of their friends made in the courses affected their

creativity. In addition, they stated that the teaching methods of the lecturers, the ideas of the lecturers, the applications they make in the courses and the presentations were effective on their creativity. The expression of pre-service science teacher ÖA042 of *"Of course, courses are effective on creativity, we learn a lot from our lecturers and improve ourselves every day, even such intellectual interactions increase creativity."* stated that she/he was influenced by both lecturers and her/his friends in the courses. Another pre-service science teacher ÖA053 expressed how she/he was affected by the works of her/his friends: "*Preparing a plan and telling everyone about their plans as if they were in the classroom sets an example for us, and we can find more creative and new applications based on an activity our friends have done."*

Pre-service Teachers' Evaluations on the Effects of Lecturers in the Higher Education Process on Their Creativity

Another higher education component that pre-service teachers were asked to evaluate about creativity in the undergraduate education process was lecturers. For this, pre-service teachers were asked "When you consider your undergraduate education, how do you evaluate the creativity of the lecturers (course, assignment, presentation, and exam)?" The answers of 27 pre-service teachers did not contain an evaluation about the creativity of the instructors. For example, the pre-service science teacher ÖA021 answered as "*Some of were the lecturers who valued our ideas and others loved rote learning sentences".* From the answer of the pre-service teacher, no inference could be made about the creativity of the instructors. Therefore, this and similar answers were excluded from the analysis. The most expressed opinion by a third of the pre-service teachers included in the analysis was that the creativity of the lecturers was insufficient. Slightly more than a quarter of the pre-service teachers stated that the creativity of some lecturers was good, but the others as insufficient. While evaluating the creativity of the lecturers, the pre-service teachers participating in the study made evaluations according to the courses, assignment, presentations and exams that were directed within the question. Most of the pre-service teachers who made this evaluation commented on the creativity of the assignment given by the lecturers. Additionally, they evaluated the creativity of the lecturers in exams, presentations, applications and activities, course content and lecture transfer. Some pre-service teachers also stated that they found the creativity of the lecturers at medium level as stated in the words of the pre-service teacher ÖA006 *"I find their creativity at medium level, neither too much nor less than it should be"*. Eighteen of the pre-service teachers whose answers were included in the analysis evaluated the creativity of the lecturers as good. Some of the pre-service teachers expressed their opinions without any justification when they made their evaluations about the creativity of the lecturers, like the pre-service pre-school teacher ÖA074, "*no creativity"* or the pre-service science teacher ÖA003, "*let me say, in half. While some of our teachers made us taste creativity, some did not even say a single word."* Some pre-service teachers, on the other hand, gave their justifications for

evaluating the creativity of the lecturers. These justifications have been analyzed and explained below under two headings.

Reasons for Evaluating the Creativity of Lecturers as Insufficient: When the answers of the pre-service teachers who evaluated the creativity of the lecturers as insufficient were examined, it was seen that five different reasons emerged. The most expressed one was that the lecturers' creativity was seen as insufficient because of their teaching style. In the answers evaluated under this category, there were opinions of pre-service teachers about lecturers on teaching courses from a slide or presentation, and direct instruction method thereof and having students lecture. The expressions of the pre-service primary teacher ÖA131 "*Except some lecturers, generally all lecturers teach their courses through presentations, so I don't think this has an impact on creativity."* and of the pre-service pre-school teacher ÖA105 "*Our creativity does not improve because other teachers except some read from the slide"* can be given as an example. The fact that lecturers teach their courses in the form of direct instruction was one of the reasons why their creativity was considered as insufficient. While the pre-service science teacher ÖA49 stated that "*Because each lecturer teaches courses in a different way, some of them teach more straightforward and without much contribution to creativity ..."*, another pre-service science teacher ÖA054 explained her/his opinion evaluated under this category with the following words: "*I do not think that some of the lecturers have a very creative thought because they just teach the course and go."* Making the students lecture was another reason for the pre-service teachers to evaluate the creativity of the lecturers as insufficient. ÖA099's answer "*Some lecturers usually ask students to distribute topics and make presentations because they teach these lessons for the first time*." can be given as an example of this opinion mostly expressed by pre-service pre-school teachers.

Secondly, the most expressed reason was that the lecturers were ordinary. Some pre-service teachers clearly emphasized mediocrity with their discourse *"ordinary teaching methods"* (ÖA115), *"ordinary assignment, exams and lectures"* (ÖA005), *"ordinary presentations"* (ÖA150). However, expressions of pre-service teachers such as *"same assignments, presentations and exams"* (ÖA016, ÖA142), *"copy paste things"* (ÖA178), *"ready-made presentations"* (ÖA69, ÖA95, ÖA099, ÖA115) have been evaluated under this category.

Another reason why pre-service teachers consider the creativity of lecturers ineffective or insufficient was that the lecturers were traditional. The answers of the pre-service science teachers ÖA015 and ÖA024 were good examples that can be given for this category: *"Some of our teachers have reflected creativity to us with creative materials and activities, but we still have teachers who utilizes more traditional education."*; *"Except for a few lecturers, most of them continued their course processes with traditional rote learning methods, so I think they are insufficient."* Apart from these pre-service teachers, who clearly used "traditional" expression in their answers, some pre-service

teachers emphasized the inadequacy of the lecturers' creativity because they used the old system and put classical exams.

Another category that emerges regarding the evaluation of lecturers' creativity as insufficient was expectations of lecturers. Teacher candidates evaluated their creativity as insufficient due to the rote expectations and pattern expectations of the lecturers. These opinions were expressed by pre-service science teachers.

ÖA044 expressed her/his opinion "*It is not very effective on creativity because lectures are conveyed by slides or verbally. We are expected to memorize."* The pre-service science teacher ÖA039 stated that there were patterns that the lecturers expect and there was no creativity because of these patterns: *"... there is an expected pattern and we were expected to make an assignment within those patterns. How free is a person of limited boundaries? I think free thinking brings creativity with it…"*

The last reason why lecturers' creativity was considered insufficient was not being a role model. The pre-service pre-school teacher ÖA086, explained her/his opinion with the following words: "*Lecturers demand very creative activities. They want us to be creative in assignment and lectures, but they are not role models themselves."*

Reasons for Evaluating the Creativity of Lecturers as Sufficient: The answers of the pre-service teachers who evaluated the creativity of the lecturers as sufficient were examined in detail. As a result of the analysis, it was seen that the answers were focused in three categories. The one with the highest frequency among these categories was related to lecturers' being role models. They considered lecturers' being role models, that is, showing their own creativity, in two different ways: using their own creativity in courses and encouraging students to do creative studies. Some of the pre-service teachers stated clearly, that lecturers show their own creativity in courses, in their expressions such as *"prepares creative lectures"*(ÖA049), *"prepares creative activities"* (ÖA041), *"uses creative techniques"* (ÖA035). On the other hand, some pre-service teachers evaluated the creativity of the lecturers as good, as they had them do studies and gave them assignment that would lead creativity. The answer of ÖA124, who was a pre-service primary teacher, as "*I think that the creativity of the lecturers is at a high level with the presentations and assignments they presented to us."* can be given as an example of the answers evaluated in this category.

Another category obtained from the answers of the pre-service teachers who consider the creativity of the lecturers well included statements about teaching styles of the lecturers. The pre-service teachers talked about the creativity of the lecturers who support the lesson with materials, use different teaching techniques, use alternative measurement techniques, and teach the course interesting. The pre-service Turkish language teacher ÖA187, whose answer was evaluated under this

category, expressed her/his opinion as follows: *"Each lecturer applied different techniques. There are also those who create their own style. Therefore, for our department, I consider the teachers are creative."* Pre-service science teacher ÖA037, on the other hand, explained her/his opinion as "…*I think our creativity has increased because they want us to create a product as a result of what we have learned in the course instead of the exam..."*.

The last category emerging from the pre-service teachers' answers was involving students in the teaching process category. In the opinions in this category, it was mentioned about the lecturers who make practices that will enable the student to be active during the course or keep the students active in the course with the style of the lecture. Considering the answer "*Some lecturers could reveal creative things or teach the course better and involve us, namely the students in the course better."* It was understood that pre-service primary teacher ÖA153 meant that the creativity of the lecturers who keep the students active with the way of teaching was good. The pre-service science teacher coded ÖA047 mentions the lecturers who involved the students in the process with the following answer: *"There are some I think are creative and there are some I think are not. Some of them just teach their lecture and go away. Some of them make us use different applications and encourage us to participate in the process and think by keeping us in contact."*

Pre-service teachers' evaluations of their own creativity

The pre-service teachers were asked to evaluate the student, which is another higher education component, that is, themselves in terms of creativity. When the answers given by the pre-service teachers were analyzed, it was observed that they answered the question in three different dimensions. In the first of these dimensions, there were answers regarding whether or not the creativity of pre-service teachers developed in the undergraduate education, and categories as *"improved"*, *"not improved"* and *"decreased"* emerged. Just over a quarter of the pre-service teachers stated that their creativity improved during their undergraduate education. When the answers of the pre-service teachers participating in the study were analyzed, almost half of the participants who said *"my creativity improved"* did not explain about what improved or why, just like the pre-service primary teacher ÖA116 said, *"I know that I am not at the point where I first started. Somehow there has been improvement."* A small portion of the pre-service teachers stated that their creativity was not improved. Some of these pre-service teachers gave similar answers to the opinion of ÖA024, *"I do not think I made much progress compared to my previous condition"* and did not make any explanation. A very small number of pre-service teachers stated that their creativity decreased and became dull during their undergraduate education.

In another dimension, the teacher candidates generally evaluated their own creativity and the categories of *"I am creative"*, *"I am not creative"* and *"my creativity is average"* emerged. Almost half of the pre-service teachers replied as *"I am creative",* or *"I am not creative"*. In one third of

these answers, pre-service teachers considered themselves as creative similar the expression *"I think my creativity is high."* (ÖA019). Nearly one third of the pre-service teachers stated that they were not creative. Pre-service primary teacher ÖA142, who was one of the pre-service teachers who thought similar, said *"I cannot define myself as a creative personality."* While the pre-service teachers were evaluating their creativity, one third of them stated that they were at a medium or average level. As an example, the opinion of the pre-service Turkish language teacher ÖA187 on her/his own creativity can be given: *"I did not see myself as creative. But it can be done when you force it. Because teachers want to see a different style. But I have average creativity."*

Finally, pre-service teachers made comments about whether they did creative studies during the undergraduate education, and the categories were obtained as *"I did creative studies during the undergraduate education"* and *"I did not do creative studies during the undergraduate process".* Three quarters of these pre-service teachers claimed that they did creative studies during their undergraduate education. Some pre-service teachers explained that they prepared creative assignments, while some of them stated that they prepared creative presentations, but they clearly used the concept of creative. Some pre-service teachers implied that their studies with adjectives such as original, different, new, extraordinary, outside the box, far from the traditional, without using the concept of creativity explicitly, was creative. Some of the pre-service teachers gave answers expressing the effort that *"I did my best", "I tried to do better", "I pushed myself", "I used my creativity as much as possible".* The expressions of pre-service Turkish language teacher ÖA179 *"I tried to be as creative as I could. I think I'm good at it."* can be given as an example. A small portion of the pre-service teachers stated that they did not do creative studies. Some of the pre-service teachers answered the question about how they would evaluate their creativity during undergraduate education with the similar responses as pre-service primary teacher ÖA131 as *"I worked just to pass the class. I did not make an effort to deliver something different."*

While the pre-service teachers participating in the study were evaluating their creativity over their undergraduate education, some of them expressed their opinions without any explanation as stated above. Some of them made explanations about the nature of their opinion. Analyzing these explanations made by the pre-service teachers, their positive and negative opinions about their creativity have been explained under two headings below.

Reasons for Students to Consider Their Own Creativity Insufficient: Almost one third of the pre-service teachers stated that they were not creative, did not improve their creativity or did not perform creative studies while evaluating their creativity. When the answers of the pre-service teachers who explained their opinions with their reasons among who hold this view were examined, it was understood that they have a negative opinion about their creativity due to what was expected of them, what was offered to them, and the opportunities. Some of the pre-service teachers who thought

that they did not perform creative studies or that their creativity did not improve stated that they have this idea because of what was expected of them. Pre-service pre-school teacher ÖA069, by saying "*We were mostly asked to prepare PowerPoint presentations, so we could not add much creativity in this part.",* stated that they could not be creative in line with what was expected of them. Some pre-service teachers talked negatively about their creativity or creativity development due to what was offered to them. While pre-service science teacher ÖA011 stated "*There are no subjects that require creativity."* and so referred to the subjects in the courses she/he have taken in her/his undergraduate education with, another pre-service science teacher ÖA048 expressed that they did not grow up creatively due to the education system and therefore did not consider herself/himself as creative, by mentioning: "*I don't consider myself as a creative person either, as the education offered to me is not creative. Because I have been educated with a rote learning-based system since primary school and my thoughts have always been limited."* It was understood that a small number of pre-service teachers stated negative opinions about their creativity due to their opportunities. Stating *"Considering the footsteps and demands of the academicians in line with the possibilities (time, cost and peer friends), it cannot be said that I am creative."* Pre-service primary teacher ÖA141 expressed that she/he was not creative because of the possibilities.

Reasons for Students to Consider Their Own Creativity Sufficient: Two groups of opinion emerged about why pre-service teachers, who made positive evaluations about their creativity, think this way. In the first of these, pre-service teachers stated that they were creative or their creativity improved thanks to their own studies. They stated that their creativity improved thanks to the presentations, materials, activities, course plans, assignment and lectures they prepared about their own studies. The expression of the pre-service primary teacher ÖA149 *"Especially the assignment, materials and activities I dealt with in the courses of teaching had a positive effect on my creativity."* can be given as an example.

In the second opinion group that emerged about the creativity and creativity of the pre-service teachers, the pre-service teachers stated that they were creative or their creativity improved thanks to what was offered to them. The pre-service teachers, who thought that their creativity improved thanks to what was offered to them, answered that their creativity improved thanks to the courses, the exams and the lecturers. Pre-service science teacher ÖA046, by stating that *"I think our lecturers and teachers have shed light on my creative thinking by adding new perspectives to me since the 1st year."*, expressed the contribution of lecturers to his/her creativity. Pre-service primary teacher ÖA122 also mentioned the impact of the exams with the words *"I have learned to think differently when we have had creative exams."*

Pre-service Teachers' Suggestions to Reveal or Improve Their Creativity

The pre-service teachers were asked about their views on what could be the practices that would reveal or improve their creativity when they evaluated their undergraduate education in terms of lecturers, courses, physical environment, administrative management and student criteria. The suggestions of the pre-service teachers regarding each criterion are explained below in order.

Suggestions for Lecturers

The pre-service teachers' suggestions about the lecturers were collected in four categories in order to reveal or improve their creativity. These categories consisted of suggestions regarding the lecturer's teaching of the course, student studies and evaluations, setting an example for students, and personal characteristics and development of the lecturers. Suggestions for lecturers for teaching of the courses included lecturing styles, providing students' active participation in the course, and opinions on technology. Regarding the teaching styles of the course, pre-service teachers suggested that lecturers use different activities in their courses, apply different methods and techniques, do not teach based on presentations only, do not present ready-made information, and teach courses based on discussion and that direct to research. The pre-service teachers made suggestions for lecturers in terms of student studies and evaluations that they should not push for grades, they should give feedbacks, that the evaluation criteria should be clear, different exam techniques should be benefited and they should not only provide studies on presentation for students. Setting examples for students was another category that emerged from the suggestions of pre-service teachers. In this category, it was mentioned that lecturers set an example for pre-service teachers with both their own studies and the studies they encouraged students. The last category created from the suggestions of the teacher candidates to the lecturers in order to reveal or improve their creativity was the suggestions for the personal characteristics and personal development of the lecturers. The pre-service teachers stated that the fact that being equipped, fair, enthusiastic, curious, respectful, moderate, extraordinary, open to change/innovation, open to criticism, open-minded, tolerant and sincere, and not being ego-centered, was effective in lecturers' creativity. They also stated that lecturers may receive training on creativity and they should improve themselves thereof.

Suggestions for Courses

The pre-service teachers were asked what could be the practices that would reveal or improve their creativity when they evaluate their undergraduate education in terms of courses. Three categories were derived from analyzing the answers given by the pre-service teachers. These were oriented towards the teaching of the course, the content of the course and the courses themselves. Almost half of the codes emerging regarding the emergence and improvement of creativity of pre-service teachers were suggestions about teaching of the course. The most expressed opinion on this subject was the

one which included suggestions for teaching methods of the lecturers. Pre-service teachers suggested that lecturers should apply different methods, techniques and strategies while teaching, not teach courses only through presentations, teach in an entertaining, interesting and attractive way, and the duration of the lecture should not be too long. A small number of pre-service teachers mentioned the similar expressions to pre-school teacher ÖA074 *as "Courses are open to creativity in terms of content. It is the teachers who block the way for this."* and implied that the lecturers were effective in revealing or improving their creativity. In another opinion group evaluating under the category of lecturing, pre-service teachers suggested that the courses should be student-centered. However, they proposed the use of materials in the courses, the teaching of courses rich in efficiency, the association of the courses with daily life, and teaching by technological developments. In the last opinion group addressed in the teaching of the courses category, the pre-service teachers stated that the courses should be conducted in a comfortable and friendly environment so that they could express their thoughts and opinions freely.

Another category consisting of suggestions for the courses for revealing and improving creativity was the category of the content of the courses. Almost half of the pre-service teachers participating in the study made a suggestion about content of the courses. The most voiced suggestion about the course contents was that the courses should be practical. In relation to that, some pre-service teachers also stated that the course contents should not be in a theoretical structure that much. The fact that the content of the courses was interesting as well as encouraging students to think and question was among the suggestions related to the courses in revealing and improving their own creativity. Another suggestion made by pre-service teachers was that course contents should not be restricted and should be flexible. It was also stated that the content of the courses should be able to be teachable outside the classroom and should be arranged in a way to bring out skills.

Considering the suggestions about the courses, the last category that emerges was the courses themselves. In the statements evaluated under this category, they stated that elective courses should be organized in a way to improve creativity, and there should be more courses such as creative drama, sports, music, visual arts. Additionally, they stated that lessons such as creativity and mind games should be added to teacher training programs. Finally, the pre-service teachers stated that they should take the courses appropriate for their professional fields and functional for their profession.

Suggestions for Physical Environment

The pre-service teachers were asked what could be the practices that would reveal or improve their creativity in terms of physical environment. When the answers given to this question were analyzed, four categories were created: suggestions for classes, suggestions for a different environment for teaching the courses, suggestions for a comfortable and ideal environment, and suggestions for an inspiring, colorful and entertaining environment. In suggestions for classes, having

classes suitable for the content of the course was the suggestion made by the highest number of pre-service teachers. In addition, it was suggested that the classes be supported with materials related to the content of the courses. In addition to these, it was stated that classroom design suitable for group work and active participation of students in the course was also effective in the emergence and improvement of creativity. Another category that was derived from the suggestions of the pre-service teachers about the physical environment was the different environments for teaching the courses category. It was among the suggestions of the pre-service teachers to have out-of-class environments where courses can be taught, and to have workshops and laboratories so that the courses were not taught only in the classroom. The pre-service teachers also stated that in order to be prepared for their professional life, realistic classroom environments should also be created. Another category related to the physical environment was comfortable and ideal environment category. One fourth of the pre-service teachers stated opinions similar to that the science teacher ÖA054 said, *"I think that people can think more comprehensively in a comfortable and spacious environment, otherwise they may not be able to think."* They argued that besides being comfortable and spacious, being an ideal environment in terms of light, heat and sound was also effective in the emergence and improvement of creativity. The last category emerged for the physical environment was an inspiring, colorful, entertaining environment category. While the pre-service primary teacher ÖA112 suggested "*First of all, corridors and classrooms which are even more colorless than the hospital corridors should be dealt with."* addressing that the environment should be colored, the pre-service science teacher ÖA042 suggested *"It must be energetic, there is no environment in which we can hear music in our school, no dance, entertainment and music, I do not think that a person who is not happy can dream and be creative."* addressing a fun environment. A small number of pre-service teachers also suggested that the boards in classrooms and corridors be equipped with inspirational model studies and posters.

Suggestions for Administrative Management

The pre-service teachers were asked, when they consider their undergraduate education, to think about the practices that will reveal or improve their creativity in terms of administrative management and to make suggestions. Six categories emerged from the answers given by the to think about the practices that pre-service teachers. The first of these categories was administrative management should be supportive, which was voiced by 38 pre-service teachers. Here, pre-service teachers mentioned the necessity of administrative management to support both students and lecturers. Another category was they should organize events category. Teacher candidates, with their statements similar to the pre-service primary teacher ÖA163's expression *"Administrative management may organize trips, seminars and competitions that improve creativity. Competitions motivate creativity.",* stated that the administrative management should organize various activities. The third category that emerged from the answers was they should provide equipment-material

category. In the answers that create this category, suggestions ranked such as *"laboratory equipment, materials required for the classroom, etc. conditions like these should be met."* (ÖA050); *"Necessary needs should be met, a space should be allocated, places where suitable materials can be obtained for creativity to places where work areas are located should be allocated."* (ÖA141); and "*Providing necessary equipment"* (ÖA917). Another category created from suggestions about administrative management was, they should listen to the students. It was stated by the pre-service teachers that they listen to the students' ideas, problems, requests and cooperate with the students when necessary. They should organize and supervise teaching category was another category derived from pre-service teachers' suggestions to administrative management in the emergence and improvement of creativity. The answers of the pre-service primary teacher ÖA154 and the pre-service pre-school teacher ÖA080 can be given as examples of the answers evaluated under this category, respectively: *"Management should add the necessary courses to the curriculum for students to discuss and exchange ideas"* and *"Administration may supervise the lecturers and how the courses are taught".* The last category emerged about administrative management was administrative management should be flexible category. Here, the pre-service teachers mentioned that administrative management should not be strict and oppressive.

Suggestions for Students

Attitudes, personal development and sociability categories emerged from the answers of pre-service teachers to evaluate applications that reveal or improve their creativity in a student dimension. The attitudes category consisted of three subcategories. These categories were found to be compatible with attitude components and were named cognitive, affective and behavioral. In the answers evaluated in the cognitive attitude subcategory, the pre-service teachers mentioned that they, namely the students, should conduct research and questioning, think, be critical and solve problems. Answers such as "Students should not rely on for everything from their teacher, they should research and question" (ÖA015); *"Information should be sought in different ways, constantly considering different perspectives"* (ÖA154); *"students should definitely have problem solving skills"* (ÖA027) may be cited. As in the statements in affective attitude subcategory, by the pre-service primary teacher ÖA172 as *"First the student should be enthusiastic and I think he should really want it."* and by the pre-service science teacher ÖA045 as *"The most important elements for the student to be creative are willing and curious. A student does not think about a subject he/she is not curious about and cannot be creative."*, being enthusiastic and curious has been expressed by many pre-service teachers. Additionally, answers such as being self-confident, motivated, not embarrassed, and free of prejudice were evaluated under the affective attitude category. The last subcategory under the attitude category was behavioral attitude. In the answers evaluated under this category, there are statements about behaviors such as students should work and strive, not to take the easy way out, participate actively in courses, express their opinions, come to classes well-prepared and take responsibility.

In personal development category, pre-service teachers mentioned about students to develop themselves, participate in activities, projects and be open to innovation and development in order to improve themselves. While pre-service primary teacher ÖA135 expressed his/her opinion on self-improvement: *"The student should be a good person who is open to innovations, enthusiastic, positive, constructive, strives to improve himself, in solidarity with his environment, interested in a social endeavor.",* the pre-service science teacher ÖA013 used the following statement: *"I think students can participate in courses, trainings, seminars and conferences in various fields to improve creativity. They may focus on interests."*

The last category that emerged for the student regarding the emergence and improvement of creativity was the sociability category. Under the sociability category, they talked about students being in cooperation with their peers and being social. *"My friends and I should encourage each other to do activities that will improve our creativity."* the pre-service primary teacher ÖA149 mentioned cooperation with peers. Another pre-service primary teacher, ÖA171, expressed his/her thoughts on sociability with the following words: *"Students should be active, comfortable, engaged. I think the creativity of pre-service teachers should be supported by social responsibility projects. I think that coming to school as if you were in high school and being taught a couple of courses and returning home is an application that reduces the student's mood a lot. ..."*

Discussion, Conclusion and Recommendations

In this research, which aims to define creativity of pre-service teachers as teachers of the future and evaluate undergraduate education processes in terms of gaining and using creativity skills, the results reached according to the findings are listed below.

In the study, pre-service teachers were first consulted on how they defined creativity. According to the results of the research, it was observed that pre-service teachers define creativity in different ways. Most pre-service teachers saw creativity as an action; they defined it as producing something and being able to take a different approach when compared to other people. The "thing" used here means products, thoughts, ideas, materials. Some of the pre-service teachers defined creativity as talent, skill, strength and predisposition, and pointed out that creativity was used in a similar sense to talent by using the -ability/-able to ability mode in these definitions. Quite few of the pre-service teachers defined creativity as something that emerged, and stated that the resulting product, idea, thought, thing, material and situation are indicative of creativity. When making definitions of creativity, it has been observed that teacher candidates describe creativity using adjectives such as authentic, original, new, different, fast, subjective, rare, functional, practical, useful and broad. As a result, creativity arises against an issue, problem, event, situation, object and subject encountered with the help of a product, ideas, thoughts, materials and imagination according to the pre-service teachers. Pre-service teachers' views on the definitions of creativity are in line with the

literature (Costello, 2000; Cropley, 2011; Ehtiyar & Baser, 2019; Güven, Gediz, & Koşukoğlu, 2020; Özerbaş, 2011; Seeling, 2012; Sternberg, 2002). Creativity is to generate ideas and possibilities, explore ways to find problems, complex situations and systems, combine ideas and produce things with a difference (Jackson & Shaw, 2005). Jahnke, Haertel, & Wildt (2015) stated that students' views on creativity are of great importance in the improvement of creativity in higher education. Students have stated that creativity arises when they develop their own thoughts, when they can make independent decisions, when curiosity and motivation increase, when they produce things and develop original new ideas.

According to the opinions of the pre-service teachers regarding whether the courses have an impact on creativity when they take into account their undergraduate education, the pre-service teachers stated that the courses in undergraduate education provide the opportunity to develop their ideas. Additionally, they stated that the presentations made in the courses improved creativity, that the materials developed in the courses and the knowledge obtained based on research had an effect, and yet the experiences acquired in the peer group affected creativity. Some pre-service teachers have expressed ambivalence about whether the courses have an impact on creativity. As a reason for this, they said that undergraduate courses are based on theory and memorization, that the courses are taught in certain patterns according to the rules and that the education is teacher centered. According to Yeşilyurt (2020) , many factors such as schools, curriculums (courses), teachers and sources of information influence the improvement of individuals' creativity and creative thinking skills. Therefore, it is extremely important that course contents particularly improve creativity. This finding supports the result achieved in the research.

The opinions of pre-service teachers regarding whether the lecturers are creative or not are another dimension that is discussed in the research and evaluated as a finding. Most pre-service teachers found lecturers inadequate in terms of creativity. As a reason for this, the pre-service teachers listed grounds such as that the lecturers offered a traditional teaching, gave the lessons with slides, used the direct instruction method, and did not include the students in the course. According to Jackson (2006), creativity is not involved in the intellectual region of analytical and critical thinking that dominates academics. Therefore, lecturers are not creative. This finding is in line with the results of the research. There were quite few pre-service teachers who expressed that the lecturers were creative. Pre-service teachers attributed the creativity of some lecturers to their use of different methods in conveying information to students, in-course and in-class practices. Few of the pre-service teachers stated that the creativity of the lecturers was related to the course they attended; that lecturers should not be expected to be creative in theoretical-verbal courses. This view is in line with the research conducted by Jahnke et al. (2015) in higher education.

The pre-service teachers also evaluated their own creativity within the scope of the research. Most of the pre-service teachers stated that undergraduate education develops themselves and that creativity has a great effect on the preparation of lecture presentations, coursework and materials, and they find themselves creative; however few of them stated that the lessons were based on memorization because they were theoretical and that there was no factor that would reveal the creativity characteristics (Ayden & İşgüzar, 2016). Ehtiyar & Baser (2019), in their studies with university students, reached the conclusion that students think that university education does not improve their own creativity, it even dulls them.

Finally, in the study, the opinions of the pre-service teachers regarding the suggestions to reveal or improve their creativity were presented to the lecturers, lessons, physical environment, administrative management and students as recommendations. Pre-service teachers expressed that lecturers should be open to change, innovation and criticism, equipped, moderate, fair and respectful. They stated that they can be more successful in creativity and develop themselves by not using different methods and techniques, not only teaching through presentation and theoretical lessons, but concentrating on activities, and encouraging students to discuss and research. One of the most important tasks of schools in today's societies is to educate individuals for creativity (Sawyer, 2006). According to Coombs and Smith (1999), creativity can be taught in higher education. Fryer, in (1996), made studies on the improvable and teachable characteristics of creativity in higher education. According to Lakota (2007) , some of the students in higher education are creative. Being creative is one of the most characteristic features of being human. Some students have a more improved sense of creativity, while others need to improve it. Academics should be role models for both colleagues and students, liberate students in decision-making, help them become aware of their own characteristics and skills without controlling them, and encourage them to be creative (Sokol, Gozdek, Figurska, & Blaskova, 2015). The more the lecturers understand and use creativity, the more they can improve their students' creativity (Turner & Day, 2012). As a result, it can be said that the creativity of university students can be improved by lecturers (Papaleontiou, Varnava-Marouchou, Mihai, & Konis, 2014). The pre-service teachers made suggestions that not only the presentations should be performed in the lessons for the evaluation of student studies and studies, but feedback should also be given to the students by the lecturers in the assignment studies, the evaluation criteria should be clear, different exam techniques should be benefited and there should be no pressure for the grade among the students. The pre-service teachers stated that the lessons were to be practical rather than theoretical and the course contents were to be flexible in order to improve creativity, that widening of the range of lessons can increase the functionality of the lessons, and that the process can reveal creativity by using different methods and materials for teaching the lesson. The fact that the lessons were a little more related to life, that out-of-class practices can further increase creativity and that a course called creativity should be in all departments can be listed as the other suggestions put by the

pre-service teachers. Students should be able to work in cooperation with each other more by putting their efforts in, not by taking the easy way out. They should take responsibility, be open to innovation and improvement, and participate more in activities by researching and questioning. They emphasized the importance of addressing different variables related to the physical environment and enriching different environments such as workshop and laboratory in the improvement of creativity. The suggestions that the classrooms should be colorful, comfortable and spacious, ideal in terms of light were included, and the necessity of active use of learning environments outside the classroom was emphasized. Cole, Sugioka, & Yamagata-Lynch (1999) in their study, emphasized that classroom practices in higher education have a great effect on the improvement of students' creativity. Schools are expected to improve students' skills such as being imaginative, taking risks, experiencing, analyzing data, ideas and situations, and communicating. Thus, students will be able to be creative (Jackson, 2006).

The pre-service teachers stated that the administrative management should manage and supervise the education process better and support students and lecturers in order to improve the creativity of pre-service teachers and lecturers. They also emphasized that administrative management should be flexible, not oppressive, and should be easily accessible and not oppressive, by listening to students more. They highlighted the importance of improving the facilities offered at the faculty and enhancing the physical environment in terms of making students more effective in performing creative activities. From this point of view, it would not be wrong to say that the administration was inadequate to support the creativity of students and lecturers. According to Sungur (1992), the distrust of those at the top of the hierarchy towards their subordinates, authoritarian management, desire to be flawless, desire to perform serious work are organizational obstacles that hinder creativity. Therefore, administrative management may be insufficient to support creativity. Jackson (2006) also emphasized that management should support the creativity of lecturers and students.

In this study, pre-service teachers, who will be teachers of the near future, evaluated higher education processes in terms of creativity and made some suggestions regarding the components of higher education. When we consider the evaluations and suggestions of the pre-service teachers, it is understood that they are calling for a reform in education faculties. This call has already been made also by educators (Özcan, 2013; Trilling & Fadel, 2009). It can be said that the basis of this call for reform lies in the emergence that accessing or having knowledge is not a particularly important virtue in this period in which we live the information age. In other words, education systems, which aim to raise the people needed by the society, are expected to raise individuals who "contribute to the cultural knowledge society" needed by the information society, and one of the skills of these individuals is said to be creativity and innovation (Trilling & Fadel, 2009, p.14). Ken Robinson, in his widely watched TED speech in 2006, says that creativity is as important as literacy in education and that we should see them in the same status. He also states that we are not trained in a way to improve

our creativity in the education system, but in a way to move away from creativity (Robinson, 2006). Robinson, (2011) states in another study that creativity is misunderstood as something specific to special people and special jobs. Contrary to this view, he emphasizes that people are born with a great capacity for creativity and the only thing to do is to improve this capacity. In this case, it can be said that the reforms to be made for education should include studies aiming to improve the creativity skills of individuals. As a result, education faculties should develop a new teacher training system that will both help improve the creativity capacities of future teachers and enable them to become teachers who will improve their own students' creativity capacities by correcting the mechanism on creativity.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Covid-19 Fears and Psychological Well-Being of Pre-service Music Teachers

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Abstract

The purpose of this study was to examine the Covid-19 fears and psychological well-being of students (n=123) at the Music Education Department of Bursa Uludağ University /Turkey in terms of some variables. Data were collected through a questionnaire that consists of the Student Demographic Information Form, the Fear of Covid-19 Scale and the Psychological Well-being Scale. Within the framework of the descriptive survey model, data were analyzed with the Mann Whitney U Test considering the students' gender, the status of their own or a relative having had Covid-19, following the courses face-to-face or online, arrival at the department by public transport, taxi or private vehicle, and the income level change of the students or their families during the pandemic. As for the analysis of psychological well-being and Covid-19 fear regarding being with family, friends or being alone during the pandemic process and the frequency of coming to the department, Kruskal Wallis H was used. In the study, Covid-19 fears of music teacher candidates were found to be slightly below the middle and their psychological well-being mean scores were above the middle. Moreover, significant results in the psychological well-being of the music teacher candidates were obtained regarding accommodation (staying with family/ friends or alone) and arrival at the department (by public transportation, taxi or private vehicle). Results for other variables for which no significant results could be obtained were interpreted on the basis of their mean scores and suggestions were made in the light of the results

Keywords: Covid-19 Fears, Music Teacher Candidates, Psychological Well-Being

DOI: 10.29329/epasr.2022.248.5

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Introduction

In the course of history, humankind has struggled with various epidemics, and these epidemics have resulted in significant losses. The Spanish flu, which caused mass deaths by infecting nearly a third of the world's population between 1918 and 1920, left its mark in the 20th century. Between the years 2011 and 2018, the World Health Organization (WHO) identified 1483 epidemic events in 172 countries. Severe Acute Respiratory Syndrome (SARS, 2002-2003) appearing as the first deadly infectious disease in the 21st century, H1N1 Outbreak (Swine Flu, 2009-2010), Middle East Respiratory Syndrome (MERS, 2012), Ebola (2014) and Zika (2015) have been the most mentioned outbreaks (Bingül Ak, et al., 2020). Furthermore, diseases such as HIV (Human Immunodeficiency Virus), AIDS (Acquired Immune Deficiency Syndrome), cholera, influenza, meningitis, malaria, and yellow fever, which are still contagious today, continue to have an impact on different parts of the world and maintain their place among epidemic diseases (Budak & Korkmaz, 2020).

Covid-19, with which the whole world struggles today, was confirmed in China for the first time on December 31, 2019. As a disease that has affected the whole world within 3 months, it has set the governments against a serious struggle in the fields of health and economy and continues to do so. The first case of Covid-19 in Turkey was confirmed on 11 March 2020, which is the same date when World Health Organization declared the virus as a global pandemic (T.R. Ministry of Health, 2021). As stated in the data of the institution, 134,308,070 cases have been identified and 2,907,944 people have died worldwide as of April 10, 2021 (WHO, 2021).

Covid-19 has brought life to a standstill around the world, changing the daily routines of individuals. Governments have declared lockdowns; employees and students have conducted their work and classes online from their homes, and continue to do so. Many sectors have become inoperative and have been experiencing a serious economic impasse. The distance that has to be kept between individuals among epidemic prevention rules has directly affected social lives, and people have got to the point of perceiving each other as potential danger. Sudden and unexpected changes in the aforementioned habits of the individuals cause them to be afraid, concerned and worried reflexively (Memiş Doğan & Düzel, 2020). These fears, concerns and anxieties are caused by the fact that the modes of transmission and the treatment of the pandemic have not been fully explained by scientists yet, vaccination has not been completed, there are losses from the close circles, negative news on social media, and the increase in mutated virus types.

In a study conducted among Spanish university students, it was found that 21.34% of the participants had moderate to severe anxiety, 34.19% depression and 28.14% stress. In a total of 50.43% of the participants, a moderate to severe impact of the outbreak was seen. In the same study, it was confirmed that students from the departments of Arts and Humanities, Social Sciences and Law

got higher scores on the impact of the event with regard to anxiety, depression and stress compared to the students in the Engineering and Architecture departments (Odriozola et al., 2020). In a study conducted in Switzerland, it was stated that the stress, anxiety, loneliness and depressive symptoms of students have worsened compared to the pre-pandemic findings (Elmer et al., 2020). Between the days before the lockdown in China due to the pandemic and the 15-17th days of the closure, an increase in the negative affective state, anxiety and depression symptoms of the students were observed in the results of data collected and compared from 555 participants of Agricultural University undergraduate students (Huang et al., 2020). In another study conducted among college students in China, it was concluded that economic effects and impacts on daily life as well as delays in academic activities were positively associated with symptoms of anxiety (Cao, et al., 2020). It is also stated that Covid-19 has caused higher anxiety in Chinese university students compared to the general population and has had negative psychological effects specific to anxiety on university students (Wang & Zhao, 2020). In the results obtained regarding the effect of lockdown caused by Covid-19 on the mental health of 1000 university students in Greece, 42.5% of university students had an increase in anxiety, 74.3% depression and 63.3% suicidal thoughts (Kaparounaki et al., 2020). Similar results were acquired in a Turkish foundation university, and it was observed that university students' anxiety levels increased due to the pandemic (Örgev, et al., 2020). Research has revealed that students around the world are adversely affected by the pandemic.

The pandemic has adverse effects on the economy, social life, education and particularly health (Bozkurt, 2020; Buluk & Eşitti, 2020; Erbaş, 2021; Zeybekoğlu-Akbaş & Dursun, 2020; Zoğal & Emekli, 2020), and the intensification of these effects continues to affect the psychological health as well as the physical health of individuals. Specifically, in the field of education, it is observed that the students who have been away from social life for a long time, have had to live with their families constantly, and have been inactive during the time spent at home, are also affected by this situation.

Right after the first case was confirmed in Turkey, education was suspended in primary, secondary and higher education institutions as a priority measure to prevent the spread of Covid-19 and protect public health on March 16, 2020, and distance online education was initiated in all institutions after a short time. The students in Bursa Uludağ University's Music Education Department also continued their 2019-2020 spring semester courses online. In the fall and spring semesters of 2020-2021, Fine Arts Education Department has been the only department among others in the Faculty of Education to instruct the courses in a hybrid (half online, half face-to-face) style. Individual courses, believed to have little risk, were conducted face-to-face, while crowded courses such as orchestra and choirs were conducted online. At this point, the choice of whether the courses would be pursued online or face-to-face has been once more up to the students. However, the preferences of many students have been affected by the curfews and the bans on public transportation

for young people under the age of 20. In this process, there have also been students and lecturers who caught Covid-19 or lost their relatives.

Not only health and economy but also teaching in all educational levels has been interrupted by Covid-19 all over the world. In addition, the negative effects of Covid-19 on individuals are felt around the globe due to the situations such as long-term inability to leave the house, limited social relationships, etc. Even though a flexible education has been planned according to the preferences and conditions of the students in the Music Education Department at Bursa Uludağ University, it is observed that students face many difficulties due to Covid-19. In this context, the psychological effects of the pandemic on the students in the Music Education Department at Bursa Uludağ University have been an issue of concern. Accordingly, the anxiety and psychological well-being of the students due to Covid-19 have been examined in line with some variables and the answers are sought for the following questions.

1. Do pre-service music teachers' fear of Covid-19 and psychological well-being differ by gender during the pandemic period?

2. Do their fears and psychological well-being differ depending on whether the pre-service music teachers or their relatives have had Covid-19 during the pandemic?

3. Is there a difference in Covid-19 fears and psychological well-being of pre-service music teachers according to their status of following the courses face-to-face or online?

4. Is there a difference in Covid-19 fears and psychological well-being of the pre-service music teachers depending on their status of staying with family/ friends or being alone during the pandemic process?

5. Is there a difference in Covid-19 fears and psychological well-being of the pre-service music teachers according to their frequency of coming to the department during the pandemic?

6. Is there a difference in Covid-19 fears and psychological well-being of pre-service music teachers depending on their use of public transport / private vehicle/taxi while coming to the department during the pandemic period?

7. Is there a difference in Covid-19 fears and psychological well-being of pre-service music teachers according to an increase or decrease in their income during the pandemic period?

Purpose of the Study

In this study, the aim is to examine the anxiety states and psychological well-being of the students in the Music Education Department of Faculty of Education at Bursa Uludağ University / Turkey towards Covid-19 in line with some variables**.**

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Importance of the Study

The research is considered important in terms of identifying Covid-19 fears and psychological well-being of pre-service music teachers in the Covid-19 pandemic, which has had many negative effects all over the world. The results are guiding with regard to taking precautions and planning in the Department of Music Education during the pandemic, which is thought to continue for a long while. At this juncture, it is believed that the results will contribute to the evaluation of the current hybrid education as well. In addition, the fact that the present study is one of the few studies that predict Covid-19 concerns of pre-service music teachers increases the significance of the study.

Method

Research Model

In this study, the descriptive survey model that is one of the quantitative research designs was used to determine the covid-19 fears and psychological well-being of pre-service music teachers. Survey researches are researches that help to measure attitudes, thoughts and beliefs, determine the relationships between variables, make predictions, and determine how subgroups change using effective measurement tools (Christensen et al., 2015). In this direction, the descriptive survey model was used in the study as it was aimed to determine the relationships between the fear of covid-19 and the psychological well-being and variables of the music teacher candidates.

Research Sample

Every year 40 students are admitted to the Music Education Department of Faculty of Education at Bursa Uludağ University. It is known that 193 students, including leap year and transfer students, are enrolled in the Department of Music Education according to the Student Affairs data. Efforts were made to reach all of the 193 students, yet only 156 of the 193 students were contacted for the reason that it was thought the participation of the ones attending the classes in the questionnaire would provide realistic data. 123 of 156 students participated in the questionnaire. In this context, the sample group consisted of 123 students studying in the Music Education Department of Faculty of Education at Bursa Uludağ University. Descriptive statistics about the sample group can be seen in Table 1.

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Table 1. Descriptive Statistics

	Frequency	Percentage
Gender		
Female	71	57,7
Male	52	42,3
Year of study in the Department of Music Education		
1st year	30	24,4
2nd year	32	26,0
3rd year	23	18,7
4th year	25	20,3
5th year or more	13	10,6
Status of their own or a relative having had Covid-19		
Yes	71	57,7
No	52	42,3
How the courses are followed in the 2020-2021 fall semester		
Followed all courses online	66	53,7
Followed some courses online and some courses face-to-face	57	46,3
Accommodation during the pandemic in the 2020-2021 fall semester		
Stayed with my family	90	73,2
Stayed with my friends	13	10,6
Stayed alone	20	16,3
Average arrival status at the Department of Music Education in 2020-2021 fall semester		
1 – 2 times a week	46	37,4
More than 2 times a week	23	18,7
None	54	43,9
Transportation vehicle to the Department of Music Education		
Private vehicle / taxi	24	19,5
Public transportation	61	49,6
No answer	38	30,9
Income of the family or student due to Covid-19		
There was a decrease due to Covid-19	74	60,2
There was no change due to Covid-19	48	39,0
There was an increase due to Covid-19	1	0,8

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Data Collection Tools and Procedure

Student Demographic Information Form

Information on the demographic characteristics of the pre-service music teachers was collected using the "Student Demographics Information Form" developed by the researcher. In the information form, questions related to the students' gender, years of study, the status of their own or a relative having had Covid-19, how they follow the courses (face-to-face / online), their accommodation status during the pandemic, the frequency of arrival at the Department of Music Education, the means of transportation and the change in the income during the pandemic process are included.

The Fear Of Covid-19 Scale

The adaptation into Turkish, validity and reliability of the Covid-19 Scale, which was developed by Ahorsu et al., (2020), was carried out by Bakioğlu et al., (2020). The applicable age range of the scale is extensive and it can be used on university students and adults. All items of the scale consisting of 7 questions are scored positively. The questions were scored between 1-5 (1-Strongly disagree… 5-Strongly agree) using a 5-point Likert type scaling. There are no reverse-scored items on the scale. Scores between 7-35 can be taken on the scale. Getting a high score reveals that the Covid pandemic fears level is 'high'. In the Turkish validity and reliability study of the scale, the Cronbach Alpha value was found as (α = .82).

Psychological Well-Being Scale

The psychological well-being scale developed by Diener and friends in 2009 was adapted to Turkish by Telef (2013) and consists of eight scale items. The items of the scale designed in Likert-type are answered between strongly disagree (1) and strongly agree (7). The total score range of the scale varies between 8 and 56 points. The scale does not possess any reverse-scored items. A high score obtained from the scale indicates a high level of psychological well-being. The scale consists of a single factor structure and the total explained variance is 53%. The original scale has item factor loadings ranging from .61 to .77. The Cronbach Alpha internal consistency coefficient of the scale, developed by Diener and friends, is calculated as .87. The Turkish version of the scale has item factor loadings ranging from .54 to .66. Test-retest reliability is found to be .86. In the Turkish adaptation of the scale, the Cronbach Alpha internal consistency coefficient is .80. Statistics on psychological well-being and fear of Covid-19 scales in the current study are shown in Table 2.

Table 2. Scale Statistics

Scale	Number of Items	Mean	Standard Deviation	Cronbach Alfa
Psychological well-being	8	39,34	8,59	0,81
Fear of Covid-19	7	16,80	5,57	0,85

The Cronbach Alpha reliability coefficient values calculated for both scales were found above 0.70. This result indicates that both scales are internally consistent. At the same time, the normality of the psychological well-being and fear of Covid-19 variables was analyzed with the Kolmogrov-Smirnov ($p <.000$) and Shapiro Wilks ($p <.000$) tests, and it was found that the distribution of both variables did not correlate with the normal distribution. It was determined that the pre-service music teachers' mean score for fear of Covid-19 was 16.80, and their psychological well-being mean score was 39.34.

The data were collected through a questionnaire and 123 volunteer participants answered the questionnaire online via google forms.

Data Analysis

Mann Whitney U Test was used to determine the psychological well-being and Covid-19 fears of the pre-service music teachers according to their gender, the status of their own or a relative having had Covid-19, following the courses face-to-face or online, arrival at the department by public transport, taxi or private vehicle, and the change in the income level of the students or their families. Kruskal Wallis H was used in the analysis of psychological well-being and Covid-19 fear considering their status of staying with family/ friends or being alone and the frequency of arrival at the department during the pandemic process.

Ethical

In the study, the research data were collected with the permit of Bursa Uludağ University Research and Publication Ethics Boards (Social and Humanities Research and Publication Ethics Committee) dated February 26, 2021 and session number 2021-02 (decision no: 9).

Results

Fear of Covid-19 and Psychological Well-Being of Pre-Service Music Teachers According to Gender in the Pandemic Period

Whether the scores of pre-service music teachers' psychological well-being and fear of Covid-19 differ by gender is given in Table 3 with the Mann Whitney U test at a 95% confidence level.

Table 3. Mann Whitney U Test Statistics According to Gender

Scales	Gender	N	Mean Rank	Significant
Psychological Well-Being	Female	71	62,69	0,802
	Male	52	61,06	
Fear of Covid-19	Female	71	66,79	0,081
	Male	52	55,46	

Whether the mean of psychological well-being scores differed between male and female students was analyzed with the Mann Whitney U test. The calculated test statistic was found to be 1797 ($p>0.05$). In this case, there is no significant difference in the psychological well-being scores of the male and female music teacher candidates. As a result of the Mann Whitney U test, performed for the mean of Covid-19 fear scores, the calculated test statistic was found to be 1506 ($p> 0.05$). Similarly, there is no significant difference in the Covid-19 fear scores of the male and female music teacher candidates. (Table 3).

Fear of Covid-19 and Psychological Well-Being of Pre-Service Music Teachers According to the Status of Their Own or a Relative Having Had Covid-19 in the Pandemic Period

Whether the scores of pre-service music teachers' psychological well-being and fear of Covid-19 differ according to the status their own or a relative having had Covid-19 is given in Table 4 with the Mann Whitney U test at a 95% confidence level.

Table 4. Mann Whitney U Test Statistics According to the Status of Their Own or a Relative Having Had Covid-19

Scales	Having had Covid-19	N	Mean Rank	Significant
Psychological well-being	Yes	71	63,54	0,576
	No	52	59,90	
Fear of Covid-19	Yes	71	58,35	0,183
	No	52	66,99	

As a result of the Mann Whitney U test calculated for the psychological well-being scores of pre-service music teachers according to their own or a relative having had Covid-19, the test statistic was found to be 1737 ($p> 0.05$). In this case, psychological well-being scores do not show a statistically significant difference considering their own or their relatives having had Covid-19. Likewise, since the Mann Whitney U test statistic calculated for the mean of Covid-19 fear scores was found to be 1586 ($p> 0.05$), there is no significant difference (Table 4).

Fear of Covid-19 and Psychological Well-Being of Pre-service Music Teachers with Regard to Their Following the Courses Face-to-Face or Online

Whether the scores of pre-service music teachers' psychological well-being and fear of Covid-19 differ with regard to their following the courses face-to-face or online is given in Table 5 with the Mann Whitney U test at a 95% confidence level.

Table 5. Mann Whitney U Test Statistics with Regard to Students' Following the Courses Face-To-Face or Online

Scales		N	Mean Rank	Significant
Psychological well-being	Just online	66	61,17	0,782
	Online and face-to-face	57	62,96	
Fear of Covid-19	Just online	66	63,73	0,562
	Online and face-to-face	57	60,00	

As a result of the Mann Whitney U test calculated for the psychological well-being scores of pre-service music teachers according to the status of following the courses face-to-face or online, the test statistic was calculated as 1826 ($p > 0.05$). In this case, there is no statistically significant difference between psychological well-being scores with regard to the situation of following the lessons face-to-face or online. Similarly, the Mann Whitney U test statistic calculated for the mean of Covid-19 fear scores was found to be 1767 ($p > 0.05$) and no significant difference was observed (Table 5).

Fear of Covid-19 and Psychological Well-Being of Pre-service Music Teachers According Their Staying with Family / Friends or Being Alone During the Pandemic Process.

Whether the scores of pre-service music teachers' psychological well-being and fear of Covid-19 differ according to their staying with family/ friends or being alone during the pandemic process is given in Table 6 with Kruskal Wallis H test at a 95% confidence level.

Table 6. Kruskal Wallis H Test Statistics According to Staying with Family / Friends or Being Alone

Scales		N	Mean Rank	Significant
Psychological well-being	With my family	90	66,33	0,018
	With my friends	13	63,54	
	Alone	20	41,50	
Fear of Covid-19	With my family	90	63,18	0,788
	With my friends	13	56,27	
	Alone	20	60,43	

As a result of the Kruskal Wallis H test calculated for the psychological well-being scores of pre-service music teachers according to their staying with family/ friends or being alone during the pandemic process, the test statistic was calculated as 7,98 ($p<0,05$). In this case, a statistically significant difference was found between psychological well-being scores according to being with family/ friends or being alone during the pandemic process. The Kruskal Wallis H test statistic, also calculated for the mean of the Covid-19 fear scores, was found to be 0.476 ($p> 0.05$) and it was observed that there was no statistically significant difference (Table 6).

Fear of Covid-19 and Psychological Well-Being of Pre-Service Music Teachers by Their Frequency of Arrival at the Department during the Pandemic Period

Whether the scores of pre-service music teachers' psychological well-being and fear of Covid-19 differ considering their frequency of arrival at the department is given in Table 7 with Kruskal Wallis H test at a 95% confidence level.

Table 7. Kruskal Wallis H Test Statistics Considering the Frequency of Arrival at the Department

Scales		N	Mean Rank	Significant
Psychological well-being	1-2 times a week	46	66,93	0,087
	More than 1-2 times a week	23	47,48	
	None	54	63,98	
Fear of Covid-19	1-2 times a week	46	67,80	0,001
	More than 1-2 times a week	23	37,41	
	None	54	67,53	

As a result of the Kruskal Wallis H test calculated for the psychological well-being scores of pre-service music teachers considering the frequency of arrival at the department, the test statistic was calculated as 4.876 ($p> 0.05$). In this case, there is no statistically significant difference between psychological well-being scores according to the frequency of arrival at the department. The Kruskal Wallis H statistic calculated for the mean of Covid-19 fear scores was found to be 13.523 ($p <0.05$). In this case, Covid-19 fear scores differ statistically according to the frequency of arrival at the department (Table 7).

Fear of Covid-19 and Psychological Well-Being of Pre-Service Music Teachers According to Their Use of Public Transport / Private Vehicle / Taxi on Their Way to the Department during the Pandemic Period

Whether the scores of pre-service music teachers' psychological well-being and fear of Covid-19 differ according to their use of public transport, private vehicle or taxi on their way to the department is given in Table 8 with Kruskal Wallis H test at a 95% confidence level.

Table 8. Mann Whitney U Test Statistics According to the Use of Public Transport, Private Vehicle or Taxi on the Way to the Department

Scales		N	Mean Rank	Significant
Psychological well-being	Private vehicle / Taxi	24	54,73	0,006
	Public transport	61	38,39	
Fear of Covid-19	Private vehicle / Taxi	24	49,27	0,141
	Public transport	61	40,53	

In the Mann Whitney U test result calculated for the psychological well-being scores of pre-service music teachers considering their use of public transport, private vehicle or taxi on their way to the department, the test statistic was calculated as 450.5 ($p < 0.05$). In this case, there is a statistically significant difference between psychological well-being scores regarding their use of public transport, private vehicle or taxi on their way to the department. The Mann Whitney U test statistic calculated for the mean of Covid-19 fear scores was found to be 581.5 ($p > 0.05$) and no statistically significant difference was found (Table 8).

Fear of Covid-19 and Psychological Well-Being with regard to Changes in the Income Level of the Family or Student Due to the Pandemic.

Whether the scores of psychological well-being and fear of Covid-19 differ with regard to the condition of the pre-service music teachers or their family's income level due to the pandemic is given in Table 9 with the Mann Whitney U test at 95% confidence level.

Table 9. Mann Whitney U Test Statistics with Regard to the Changes in the Students or their Family's Income

Scales		N	Mean Rank	Significant
Psychological well-being	There was a decrease	74	59,55	0,448
	There was no change	48	64,51	
Fear of Covid-19	There was a decrease	74	60,57	0,717
	There was no change	48	62,94	

As a result of the Mann Whitney U test calculated for the psychological well-being scores with regard to changes in the family or music teacher candidate's income level during the pandemic period, the test statistic was calculated as 1631.5 ($p > 0.05$). A student who answered that there was an increase was not included in the analysis. In this case, there is no statistically significant difference between the psychological well-being scores of the student considering the situation of a decrease in the income level of the students or their families due to the pandemic. Likewise, the Mann Whitney U test statistic calculated for the mean of Covid-19 fear scores was found to be 1707 ($p > 0.05$) and no statistically significant difference was observed (Table 9).

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Discussion, Conclusion and Recommendations

All over the world, Covid-19's several adverse effects on individuals can be seen. The effects in question are encountered in university students as well, and the consequences of this situation, which has been experienced for more than a year and to which the students are exposed, continue to be investigated. The discussion, which is examined in consideration of the results obtained regarding fear of Covid-19 and psychological well-being of the students according to some variables in the current study designed in this direction, is given below.

In the Fear of Covid-19 Scale, scores between 7-35 can be taken. Getting a high score reveals that the Covid-19 fear level is high. In the present study, pre-service music teachers' mean score of Covid-19 fear was determined as 16.80. In this case, it can be said that the pre-service music teachers' fears of Covid-19 are slightly below the middle. Meanwhile, considering that the highest score that can be obtained from the psychological well-being scale is 56, it can be said that the psychological well-being of pre-service music teachers is above the middle as the mean score of pre-service music teachers' well-being is 39.34.

57.7% of the pre-service music teachers participating in the present study are female students and 42.3% are male students. In the research findings, no statistically significant difference was found between the psychological well-being scores of pre-service music teachers according to gender during the pandemic period. In another study, data which were collected before the pandemic, no difference by gender was found in the well-being of the students at the same institution (Onuray Eğilmez, 2021). In the current study, both genders' mean scores of psychological well-being are close to each other. However, even though it was determined that there was no significant difference in Covid-19 concerns by gender during the pandemic period, Covid-19 fears of female students were observed to be higher compared to male students. Ahorsu et al., (2020) and Duman (2020) also stated that the fear of Covid-19 did not differ significantly by gender in their research. However, in the studies of Bakioğlu et al., (2020), Doshi et al., (2020), Haktanır et al., (2020), Kasapoğlu (2020), Memiş Doğan and Düzel (2020), Tutal and Efe (2020) and Wang and Zhao (2020), it was revealed that women had higher fear of Covid-19 than men. Çölgeçen and Çölgeçen (2020) also found out that women's levels of state-trait anxiety were higher than men during the pandemic period. In another study, it was stated that those with higher perceived stress were women (Kecojevic et al., 2020). As a matter of fact, it is stated by Yaluğ Ulubil (2021) that generally women have two times more anxiety disorders in comparison with men. As of 2012, it has been reported that 65-70% of depression patients in Turkey are women and 30-35% are men (Okyay et al., 2012). Thus, it can be said that the research result is an acceptable one.

In the present study, the status of pre-service music teachers or a relative having had Covid-19 was inquired, and it was found that 57.7% of their own or a relative had a history of Covid-19, while

42.3% of their own or a relative did not contract the virus. It is observed that the rate of students who themselves or a relative had caught the disease is higher than those who did not. Psychological well-being and fear of Covid-19 scores of pre-service music teachers do not demonstrate a statistically significant difference considering their own or a relative having had Covid-19 or not. However, it can be seen that the psychological well-being mean scores of the pre-service music teachers who themselves or a relative has had the virus are higher and the mean scores of fear of Covid-19 are lower. The fact that the individual or a relative has had the virus causes them to closely observe or experience the effects of the disease. It is believed that the past experience with the virus reduces the uncertainty about the disease in parallel with the anxiety. In a study, in which 960 participants between the ages of 18-76 were included, no significant difference was found between those whose relatives had the virus and those who did not (Bakioğlu et al., 2020). Factors such as the pandemic situation going on for more than a year, the death and spread rates of the virus, the increasing variety of mutations worldwide, different scientific views of scientists about the disease, the fact that the vaccination has just started and university students not having been vaccinated yet, etc. can cause university students to feel vulnerable to the disease. Furthermore, it is thought that young people have uncertainty about what kind of process they will encounter in case of contracting the virus and where the process will evolve. Sarıçam et al., (2014) define "uncertainty, in other words, the vagueness of the future and expectations about the future as a concept that can have adverse effects on human psychology". The aforementioned uncertainty can be explained as the reason for the low levels of psychological well-being and the high levels of Covid-19 fears of the pre-service music teachers who themselves or a relative have not yet caught the disease. In the research of Duman (2020), it was also determined that although the fear of Covid-19 was significantly higher in those who lost their relatives compared to those who did not, there was no significant difference considering whether the student or a relative have caught Covid-19 or not. However, in the study of Cao et al., (2020), it was put forward that family members, relatives or an acquaintance's catching the Covid-19 virus increased people's anxiety. According to Çetin and Anuk (2020), individuals who have not encountered death due to Covid-19 in their families and close circles have higher psychological resilience. In another research, no significant difference could be found between the groups in terms of state-trait anxiety levels according to the existence of relatives diagnosed with Covid-19 of individuals residing in Turkey (Çölgeçen & Çölgeçen, 2020).

In the present study, it was determined that 53.7% of the pre-service music teachers followed all the courses online, and 46.3% continued some courses face-to-face and some online. There was no statistically significant difference in psychological well-being scores and fear of Covid-19 scores according to the candidates' status of following the lectures face-to-face or online. Nevertheless, it is seen that the psychological well-being mean score of the pre-service music teachers who have been following the courses face to face is slightly higher than the pre-service music teachers who follow

the courses only online. In the researches of Görgülü Arı and Hayır Kanat (2020), it was stated that despite significant progress in online education, teacher candidates thought it could not be on par with face-to-face education. Likewise, in another study conducted with music department students, it was stated that web-based online education was not as efficient as face-to-face education, especially in applied courses, and the students wanted to continue their education face-to-face in the post-pandemic period (Özer & Üstün, 2020). It can be seen that the teacher candidates think that face-to-face education is more efficient. It is believed that these opinions of the students revealed through research may be one of the reasons for the higher psychological well-being of the students who have attended the courses face-to-face in the present study. In parallel with this situation, considering the pre-service music teachers' fears of Covid-19, it is seen that although there is no significant difference, students who only attend classes online have higher levels of Covid-19 fear. It is an anticipated result that students with high levels of Covid-19 fear have preferred following the courses online. Aşkın et al., (2020) state that social relationships could be a vital biological need for psychological well-being, physical well-being and even survival. The fact that the well-being of the pre-service music teachers who have stayed away from the social environment of the department by following the courses online is lower and, parallel to this, higher Covid-19 fears than the students who have followed some courses face-to-face, coincide with the views of Aşkın et al., (2020). In addition, considering the result obtained in the present study regarding staying with family/ friends or being alone, it was observed that the psychological well-being mean score of the pre-service music teachers who were alone during the pandemic was lower than the music teacher students who stayed with their family/ friends. This situation justifies the obtained findings regarding psychological well-being and fear of Covid-19 according to the situation of following the courses online or face-to-face. Çetin and Anuk (2020) also stated that with the increase in the students' feelings of loneliness, their psychological resilience decreased by being affected negatively. They make further comments about how interpersonal interaction and communication is a strong and universal need for people, and distance from other people and the lack of face-to-face contact can lead not only to physical distance in relationships but also to emotional isolation. Another finding obtained in the present study, that students who have arrived at the department one or two times a week have a higher mean score of psychological well-being compared to students who have never come, also supports this view. However, a decrease in the well-being of students who have come to the department more than two times a week, probably because they have become busier as the time they spend in the department increased, is observed. However, in the current research findings, it can also be seen that students with the lowest levels of Covid-19 fear are the ones who have come to the department for more than two days. It is thought that these students normalized this situation, which has been going on for more than a year and the end of which is not clear. In addition, the fact that they could come to the department more than two times a week can be attributed to their low levels of Covid-19 fear.

In the present study, it is observed that the psychological well-being mean score of the students who were alone during the pandemic period was lower than the students who stayed with their family/ friends. Cao et al., (2020) also stated that living with the family was one of the protective factors for individuals in the Covid-19 process and that the support of family and friends reduced stress during pandemics. However, it is seen that the pre-service music teachers who stay with their families and have higher psychological well-being mean scores also have high levels of Covid-19 fear, even though it is not significant at the same time. It is believed that this situation stems from the fear of transmitting the virus to their families. As a matter of fact, Cai et al. (2020) state that the fear of transmitting the disease to their family and relatives during the pandemic period increases anxiety and stress levels in healthy individuals.

Covid-19 is a respiratory disease that spreads from person to person. Therefore, closed and crowded areas increase the spread of the disease. In the study, a statistically significant difference was found between the psychological well-being scores of the pre-service music teachers according to their use of public transport, private vehicle or taxi on the way to the department. In addition, the mean of Covid-19 fear score of the pre-service music teachers who have used private vehicles or taxis on their way to the department was higher than the candidates using public transport. It is seen that the fear of catching the virus leads students to less crowded travel options. As a matter of fact, the psychological well-being mean score of the pre-service music teachers who have used private vehicles or taxis was found to be higher in the study. This finding can be interpreted as traveling with less crowded travel options makes students feel psychologically good.

Due to the Covid-19 outbreak, world states have imposed lockdowns to reduce the spread of the virus. In order to protect public health and minimize the transmission of the virus among countries, borders have been closed and transportation between countries has been restricted. Thus, industry-specific production has come to a standstill in parallel with the international economy, and the global economy has been adversely affected by the increase in health expenditures (Duran & Acar, 2020). Today, the number of studies investigating the adverse effects of economic fluctuations caused by Covid-19 on individuals is increasing. The research analysis of Kecojevic et al., (2020) has shown that economic difficulty is the most important predictor of depression among the respondents. Moreover, another study found that people with high-income levels had lower perceived levels of Covid-19 fear and death anxiety than those in the low-income group (Kavaklı et al., 2020). Cao et al. (2020) state that the stable and regular income of the family is one of the protective factors of psychology in the Covid-19 process. In the present study, 60.2% of pre-service music teachers in Bursa Uludağ University stated that their family's or their own income level decreased during the Covid-19 pandemic period. In addition, although there is no significant difference, it is an unexpected result that the psychological well-being of pre-service music teachers who did not have any change in

the income level of their own or their family during the pandemic period was lower than those with a decrease in their income levels, and their fears of Covid-19 were high.

Even though it is not statistically significant in the current study, it was determined that female students' fear of Covid-19 mean score is higher than that of male students. With further research, the reasons behind this situation can be revealed and solutions can be proposed.

The results of the study reveal that students who follow some courses face-to-face have lower fear of Covid-19 and higher psychological well-being compared to students who continue their courses completely online. Moreover, it is observed that the psychological well-being mean score of the students who come to the department one or two times a week is higher than the students who never come. Based on this result, it is recommended that the future education planning of the courses that do not pose a risk should be planned more face-to-face.

In the results of the study, it is seen that the well-being mean score of the students who were alone during the Covid-19 pandemic period was low. Likewise, it was found that the psychological well-being mean score of the students who themselves or their relatives have not had Covid-19 was also low. In this case, the obtained results will be influential for the administrators of the Music Education Department to organize online activities that can enhance the well-being of the students in question. It is recommended to go through similar studies with different variables in a larger sample group.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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The Effect of Animated Teaching on Science Teacher Candidates' Chemistry Achievements and Learning Persistence

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Abstract

The purpose of this study was to determine the effect of teaching with animation on chemistry achievement and learning persistence on pre-service science teachers studying in the undergraduate program of science teaching. The quasi-experimental model, one of the quantitative research approaches, was used in the study. The pretest-posttest was applied with the experimental control group. Eighty-two pre-service teachers, randomly selected with the appropriate sampling method, participated in the research. The "General Chemistry Achievement Test" developed by Sönmez (2017), which has validity and reliability in the literature, was used as a data collection tool. In addition, to determine the persistence of learning, chemistry achievement test post-test applications were applied again at six-week intervals. The data obtained from the findings was analyzed using descriptive and inferential statistical techniques in the SPSS 23.0 package program. Because the collected data did not have a normal distribution, the research conducted using nonparametric test techniques (Mann Whitney U and Kruskal Wallis) revealed a significant positive difference in favor of the experimental group to which animation was applied. In addition, in terms of gender variables, it has been determined that women have a higher mean than men. In contrast, there was no significant difference in grade level between teacher candidates. Following a six-week persistence test, it was found that there was a significant and positive correlation, ensuring the learning's persistence.

Keywords: Animation, chemistry achievement, science education

DOI: 10.29329/epasr.2022.248.6

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Introduction

In the globalizing world, science and technology are changing people's lifestyles and perspectives on life more and more every day. As a result, countries now consider developed and qualified labor and raise qualified individuals. Today, which is called the 21st century, many skills individuals need to acquire have begun to come to the fore. Among these skills are critical thinking, stress management, multi-criteria decision-making, creative and reflective thinking, and computer and technology literacy (Ayyıldız & Yılmaz, 2021). In addition, as it is known, methods such as animation, simulation, digital technology-based teaching (Demirkan, 2019) and science center visits are generally teaching techniques that provide permanent learning and have a high retention rate.

Although there are many ways to grow qualified individuals (learning by doing, being a role model, learning on the job in applied professions, etc.), the best one is to grow individuals through education (Akçay, 2019; Gibson, 2012).

Individuals can develop and change in a systematic, programmed, and specific curriculum under legal guarantees with education. The education process has different areas, from pre-school to higher education, and has many stages (Jorde & Dillon, 2012). Social studies, classroom teaching, mathematics teaching, physics teaching, biology teaching, science teaching, and chemistry teaching (Kousa et al., 2018). Science teaching comes to the fore once more in these fields. It has a multidisciplinary structure and has an important place in individuals' understanding of the society and environment in which they live, making science teaching a little more prominent (Lai & Viering, 2012; Robin, 2008).

Many approaches are used in science teaching today (Sözbilir, 2017). These approaches can be classified as traditional, contemporary, and complementary approaches. While traditional technics are predominantly teacher-centered, they are teaching styles. Students are primarily passive and subject to a rote-based learning process (Patton, 2014; Roblyer, 2006). In contemporary approaches, on the other hand, although there is a teacher and student-centered education process, the teacher is in a more guide and guiding position (Jung & Brady, 2020). Artificial intelligence, context-based learning, brain-based learning, out-of-school learning, game-based learning, mobile learning, animation, simulation, teaching with analogies, and the use of mind maps are some of these methods (Çevik & Şenturk 2019; Ebersole, 2019; Genç, 2013). The REACT model, concept maps, portfolios, project-based learning, animation, simulation, video, and multimedia methods.

The 21st century can be called the digital age or the era of digital applications. The incredible transformations in information technologies, especially after the 2000s, encourage us to feel technology in every part of our lives and use it at a level that we often have to (Burgess & Sievertsen, 2020). Technology has entered our lives, undoubtedly affected education systems and teaching

programs and making it necessary to include technology-based applications in this process (Conejar & Kim, 2014; Eryaman, 2007). Especially in the science education process, many dangerous applications within the scope of physics, biology, and chemistry courses should be made in the laboratory environment with simulation and animation providing many conveniences and advantages in terms of time, effort, and health.

Chemistry teaching, which is carried out using the multimedia method with animation content, is very advantageous. Plus, it's simple and easy to include in the training process. When the necessary infrastructure or appropriate laboratory conditions are not available, computer-aided teaching methods with animation content can be highly beneficial to both educators and students. When looking at the research, it is clear that the animated teaching method is widely used in science education, particularly in chemistry, because it provides a rich learning environment in terms of both safety and auditory, visual, and multimedia. Students can also use the animation contents to practice continuously, test their hypotheses through trial and error, gain scientific process skills, develop critical thinking, and make multi-criteria decisions. Simultaneously, students can use advanced technology through applications and animations to the point of being computer and technology-literate individuals (Daldal, 2010).

In recent years, educators have started to use dynamic content provided by computer animations very often. Because instead of using static pictures or graphics in animations, the temporal change can be seen directly by moving objects. Moreover, the animation is not just used to express surreal actions or construct creative scenarios. It can also be used, for example, to facilitate the understanding of chemical concepts (Yılmaz & Bayrakçeken, 2017) or to monitor the movements of atoms and molecules more closely. Thus, the difficulties experienced by the students in the lessons are reduced and the teaching becomes livelier and more attractive (Lowe & Schnotz, 2008).

The importance of the research

Chemistry education is critical for understanding life and making sense of the environment in which people live. Moreover, because we encounter many chemistry-related events in our daily lives, many are related to matter and materials. In this context, a suitable laboratory environment or well-prepared learning environment should be prepared for qualified chemistry teaching. Therefore, many studies on chemistry teaching and the computer-assisted instruction method have been published in the literature (Ertan, 2019). In addition, studies on analogy, animation, simulation, and computer-assisted instruction methods (Abraham et al., 2015; Acevedo-Rocha et al., 2021; Akçay, 2019; Bell & Trundle, 2008), conceptual change, concept map, animation apps. etc. studies involving applications (Larwin and Larwin, 2011; Turan-Oluk, 2016), Studies on chemistry achievement (Günter, 2018), attitude and logical thinking disposition (Akıncı, 2019; Battal, 2020; Gökçe, 2015; Taşkın, 2019), Studies on the effect of model applications on learning products (Çevik, 2018; Öztürk & Doymuş,

2018; Tombul, 2019), Studies on the REACT strategy and the 5E model (Çevik, 2017; Danacı, 2018), Studies on computer-assisted instruction supported STEM activities and creativity applications (Tosun, 2019).

Purpose of the research

This study is expected to contribute to the literature by providing students with more than one skill type and permanent chemistry teaching in the distance education process applied due to the Covid-19 pandemic. It is also considered important as a guide for future research. In this context, answers to the following sub-problems were sought in the study:

1. Is there a statistically significant difference between the experimental and control groups' achievement test pre-test scores?

2. Is there a statistically significant difference between the experimental and control groups' achievement test post-test scores?

3. Is there a statistically significant difference between the experimental group's achievement test pre-test and post-test scores?

4. Is there a significant difference between the participants in the control group's achievement test pre-test and post-test scores?

5. Regarding the gender variable, is there a significant difference in the achievement test post-test scores of the experimental and control groups?

6. Regarding the grade level variable, is there a significant difference between the experimental and control groups' achievement test post-test scores?

7. What degree of correlation between the experimental group's achievement test post-test and retention test scores?

8. What is the level of correlation between the achievement test post-test and the retention test scores of the control group participants?

9. What is the level of correlation between the experimental and control group participants' retention test scores?

Method

Semi-experimental design was preferred as a research method. Experimental designs are frequently preferred in studies where certain variables are kept constant or controlled (McMillan & Schumacher, 2009). The research process applied pre-test, post-test, experimental, and control group

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components. Science teacher candidates' chemistry achievements and learning persistence were examined using animation techniques in science lessons. Firstly, students were selected for the experimental and control groups in this context. Then the experimental group students were given animation. Finally, "the control group students" were taught "the traditional method" for six weeks.

Sample Group

The research sample group consists of 82 teacher candidates enrolled in the science teaching program. A convenient sampling method was preferred when determining the study group. The convenient sampling method saves the researcher time, effort, and money while providing an accessible sample (Fraenkel & Wallen, 2003). In addition, many studies with appropriate samples can be found when looking through the literature. Table 1 shows the demographic characteristics of the study group.

Table 1. Demographic Characteristics of the Sample Group

Variable	Sub Variable	Frequency	Percent
Gender	Female	44	53.66
	Male	38	46.34
Grade Level	1st grade	20	24.39
	2nd grade	16	19.51
	3rd grade	24	29.27
	4th grade	22	26.83
	Total	82	100

Table 1 shows that the grade level variable is examined, it is found that 24.39 percent (n=20) of 1st-grade students, 19.51 percent (n=16) of 2nd-grade students, 29.27 percent (n=24) of 3rd-grade students, and 4th-grade students fall into this category. It is seen that the rate of those found is 26.83% (n=22). While determining the experimental and control groups, a classification was made to include 41 participants with similar characteristics in both groups.

Data Collection Tools

Chemistry Achievement Test

An achievement test with validity and reliability in the literature was used during the research process. In this context, a chemistry achievement test developed by Sönmez (2017) consisting of 21 questions, open-ended questions, and multiple-choice was applied. Before using the said achievement test, necessary expert opinions were taken. "The Cronbach's Alpha" reliability coefficient was 0.86 in the chemistry achievement test pilot study. This rate is well above the safety level of 0.70 in studies

conducted in social sciences (Babayi & Hammanjulde, 2018; Kousa et al., 2018; Tabachnick & Fidell, 2007) is suitable for use.

Persistence Test of Learning

The chemistry achievement test was given six weeks after the post-test application to determine the persistence of the education process in which animation techniques were used in the research. The test was then used once more. In the findings section, the obtained results are presented in detail.

Data Analysis

The data subjected to descriptive and inferential statistics applications were analyzed using quantitative techniques. Data is collected, processed, summarized, and interpreted in the descriptive analysis. In contrast, inferential analysis examines the relationships between the variables belonging to the sample. First, it was reviewed whether the distribution of the data was expected. Shapiro-Wilk and Kolmogorov-Smirnov tests were applied for normality distribution (Can, 2016). In this context, "Mann-Whitney U Test" and "Kruskal Wallis Test," which are nonparametric tests, were used because the data did not show normal distribution (Büyüköztürk, 2010). In the persistence test results analysis, the correlation technique was used. The chemistry achievement test post-test and the learning persistence test were evaluated together.

Data Collection

During the application process, necessary permissions were first obtained from the relevant authors, the institution where the application was made, and the participants for the data collection tool. Then, information about the applications was given for a week, and pre-test applications were carried out. During the next six weeks, lessons were taught with animation techniques in the experimental group, and chemistry was taught with traditional teaching in the control group. While organizing animation activities, image editing applications, presentation applications, some Web 2.0 tools, and Flash and similar animator applications were used. In the eighth Week, post-test applications and general evaluation were made. Finally, the retention exam was given six weeks following the post-test applications. The findings section contains the findings. The application schedule is shown in Table 2.

Table 2. Implementation Schedule

Weeks	Activities
1	Information and pre-test applications
2	Activity 1. The structure of the atom and atomic models
3	Activity 1. Periodic table
4	Activity 1. Chemical compounds
5	Activity 1. Chemical reactions
6	Activity 1. Acids and bases, solutions
7	Activity 1. Thermodynamics
8	Activity 1. General evaluation and post-test applications
…	A waiting period of 6 weeks was realized.
14th Week	Persistence test applications

Results

Obtained findings were analyzed sequentially by considering the problem situation before delving into the research's subproblems, whether the normal data distribution was determined. In this context, "Shapiro-Wilk" and "Kolmogorov-Smirnov" tests were applied to control the assumption of normality (Can, 2016). Table 3 shows the results of the normality distribution.

Table 3. Normality Distribution Results

Groups	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistics	Df	p^*	Statistics	Df	p^*
Control Group Achievement Pre-Test	0.150	390.000	0.011	0.960	390.000	0.000
Control Group Achievement Posttest	0.193	390.000	0.001	0.883	390.000	0.004
Experimental Group Achievement Pre-Test	0.138	390.000	0.038	0.951	390.000	0.017
Experimental Group Achievement Post-Test	0.117	390.000	0.024	0.950	390.000	0.001
Control Group Retention Test	0.244	390.000	0.000	0.908	390.000	0.001
Experimental Group Retention Test	0.134	390.000	0.013	0.959	390.000	0.019

*$p<0.05$, Df: Degrees of freedom

When looking at Table 3, which contains the normality distribution results, it can be seen that the experimental and control groups' achievement and persistence test results did not provide the

normality distribution. Since the significance value p=0.05 was significant in all tests, parametric tests were used instead of nonparametric tests.

Sub-Problem (1)

"Is there a significant difference between the achievement test pre-test scores of the participants in the experimental and control groups?" was the study's first sub-problem. Table 4 shows the Mann-Whitney U test results in this context.

Table 4. Findings on the first sub-problem

Mann-Whitney U Test Findings						
Variable	Sub-variable	Rank Average	Rank Sum	U	p^*	Difference
Achievement Pre-Test	Control	36.49	1423.00	643.00	0.239	-
	Experiment	42.51	1658.00			

*p>0.05

Table 4 shows that the experimental and control groups' chemistry achievement test pre-test scores are not significantly different (p=0.239>0.05). The experimental and control groups of science teacher candidates had similar knowledge levels and participated equally in the research.

Sub-Problem (2)

"Is there a significant difference between the achievement test post-test scores of the experimental and control groups?" is the research's second sub-problem. In this context, Table 5 contains Mann-Whitney U Test results.

Table 5. Findings on the second sub-problem

Mann-Whitney U Test Findings						
Variable	Sub-variable	Rank Average	Rank Sum	U	*p*	Difference
Achievement Post-Test	Control	25.41	991.00	211.00	0.000	E > C
	Experiment	53.59	2090.00			

p<0.05. Experimental Group=E, Control Group=C

When the chemistry achievement test post-test scores of the experimental and control groups were compared in Table 5, it was discovered that there was a significant difference (p=0.000<0.05) between the experimental and control groups' chemistry achievement test post-test scores. This difference favored the experimental group. The activities resulted in a change in the knowledge levels of the science teacher candidates in both the experimental and control groups, with the experimental group showing a more significant change.

Sub-Problem (3)

"Is there a significant difference between the chemistry achievement test pre-test and post-test scores of the participants in the experimental group?" is in the form. In this context, Table 6 contains the Mann-Whitney U test results.

Table 6. Findings on the third sub-problem

Mann-Whitney U Test Findings						
Variable	Sub-variable	Rank Average	Rank Sum	U	*p*	Difference
Experimental Group	Pre-Test	20.19	787.50	7.50	0.000	Post > Pre
	Post-Test	58.81	2293.50			

p<0.05, Pre-Test=Pre, Post-Test=Post

When Table 6 was examined, it was found that there was a significant difference between the pre-test and post-test scores of the chemistry achievement test pre-test and post-test scores of the experimental group pre-test and post-test scores (p=0.000<0.05), with the experimental group post-test scoring higher. It means that, compared to the initial level, the experimental group's science teacher candidates' knowledge levels changed due to the activities. This change favored the post-test, i.e., based on the outcomes of the applications.

Sub-Problem (4)

"Is there a significant difference between the chemistry achievement test pre-test and post-test scores of the participants in the control group?" is in the form. Table 7 contains the "Mann-Whitney U Test" results in this context.

Table 7. Findings on the fourth sub-problem

Mann-Whitney U Test Findings						
Variable	Sub-variable	Rank Average	Rank Sum	U	*p*	Difference
Control Group	Pre-Test	20.15	786.00	6.00	0.000	Post > Pre
	Post-Test	56.15	2295.00			

p<0.05, Pre-Test=Pre, Post-Test=Post

When Table 7 was examined, it was found that the pre-test and post-test scores of science teacher candidates in the control group differed significantly (p=0.000<0.05). After the post-test, this difference favored the control group. It means that the pre-service teachers in the control group's knowledge levels changed due to the activities compared to their initial levels. This change was again in favor of the post-test, based on the application results.

Sub-Problem (5)

"Is there a significant difference between the chemistry achievement test post-test scores of the participants in the experimental and control groups in terms of gender?" is in form. In this context, Table 8 contains Mann-Whitney U Test results.

Table 8. Findings on the fifth sub-problem

Mann-Whitney U Test Findings						
Variable	Sub-variable	Rank Average	Rank Sum	U	*p*	Difference
Gender	Female	49.25	2355.00	8.50	0.003	F > M
	Male	36.15	1245.00			

p<0.05, Female=F, Male=M

When looking at Table 8, it was found that there was a significant difference in gender between the pre-service teachers' chemistry achievement test post-test scores in the experimental and control groups (p=0.003<0.05). This disparity was in females' favor. From this, it can be seen that the achievements of female participants in the study outnumber male participants.

Sub-Problem (6)

"Is there a significant difference between the chemistry achievement test post-test scores of the participants in the experimental and control groups in terms of the grade level variable?" is in the form. In this context, the "Kruskal Wallis Test" results are in Table 9.

Table 9. Findings on the sixth sub-problem

Kruskal Wallis Test Findings						
Variable	Sub-variable	Rank Average	Df	X2	p	Difference
Grade level	First-grade	66.74	3	42.211	0.002	3 > 2 3 > 1
	Second-grade	65.41				
	Third-grade	78.26				
	Fourth-grade	69.41				

p<0.05, Df: Degrees of freedom

Table 9 shows that in terms of grade-level variables, there is a significant difference between the chemistry achievement test post-test scores of science pre-service science teachers in the experimental and control groups (p=0.002<0.05). This difference is between 3rd grade and 1st grade and 3rd grade. Therefore, it was determined to be among the 2nd class and favoring the 3rd class. This shows that the chemistry achievement test results of the 3rd-grade pre-service science teachers are higher and more significant than the pre-service science teachers at the other grade level.

Sub-Problem (7)

"How is the correlation level between the chemistry achievement test post-test and retention test scores of the participants in the experimental group?" is in the form. In this context, Table 10 contains Spearman's Rank Correlation (Spearman's Rho) analysis results.

Table 10. Findings on the seventh sub-problem

Experimental Group Achievement Test and Persistence Test Post-test		
Variables	Rank	(r=Points)
Spearman's Rho	Correlation (Value) Coefficient	0.751**
	p	0.000
	N	41

**p<0.01 *p<0.05 significance level

When Table 10 was examined, it was found that the chemistry achievement test post-test scores and the retention test score of the pre-service science teachers in the experimental group had a significant and positive correlation of r=0.751 p=0.000. It is shown that animation techniques and chemistry teaching give pre-service science teachers permanent learning.

Sub-Problem (8)

"How is the correlation level between the chemistry achievement test post-test and retention test scores of the participants in the control group?" is in the form. In this context, the Spearman Rank Differences Correlation analysis results can be found in Table 11.

Table 11. Findings on the eighth sub-problem

Control Group Achievement Test and Persistence Test Post-test		
Variables	Rank	(r=Point)
Spearman's Rho	Correlation (Value) Coefficient	0.409*
	p	0.003
	N	41

**p<0.01 *p<0.05 significance level

When Table 11 was examined, it was found that the chemistry achievement test post-test scores and the retention test score of the pre-service science teachers in the control group had a significant and positive correlation of r=0.409 p=0.003. This situation shows that pre-service science teachers ' teaching chemistry with traditional teaching methods has a permanent effect.

Sub-Problem (9)

"How is the correlation level between the retention test scores of the participants in the experimental and control groups?" is in the form. In this context, Table 12 contains Spearman Rank Differences Correlation analysis results.

Table 12. Findings on the ninth sub-problem

Experimental and Control Group Persistence Test		
Variables	Rank	(r=Point)
Spearman's Rho	Correlation (Value) Coefficient	0.446**
	p	0.001
	N	41

**p<0.01 *p<0.05 significance level

When Table 12 is examined, it is found that the retention test scores of science teacher candidates in the experimental and control groups have a significant and positive correlation of r=0.446 p=0.001. This shows that pre-service science teachers' teaching chemistry with animation techniques and traditional methods has a persistent effect.

Discussion, Conclusion and Recommendations

When the literature is examined, it is seen that the studies carried out within the scope of computer-assisted teaching methods (such as animation and multimedia techniques) and chemistry teaching primarily cover the studies at primary, secondary, and high school levels. They are carried out in educational environments with complementary approaches and face-to-face environments rather than contemporary and traditional studies (Barrot, 2021). Furthermore, the CAI method was fully implemented with remote access, which is an outstanding aspect of this research. Moreover, applications were carried out within the scope of mandatory distance education during the COVID-19 pandemic period. In this regard, the study is expected to contribute to the literature because it is appropriate for the nature of the animation, presentation, and computer-assisted instruction method (Öztürk, 2021) and is, in many ways, both developer and application-oriented.

This study, which examines the effects of pre-service science teachers' animation techniques and chemistry teaching on chemistry achievement and persistence, supports the literature (Jamil & Yasak, 2021). The results are given in detail in the findings section. However, some results that overlap and differ from the literature are discussed below.

The chemistry achievement test post-test scores of science teacher candidates in the experimental and control groups were significantly different (p=0.000<0.05). This difference was in

the experimental group's favor. In addition, it was discovered that there was a significant gender difference in the academic achievement test post-test scores of science teacher candidates in the experimental and control groups ($p=0.003<0.05$). Again, this difference was in favor of women. The literature shows that women's analytical and critical thinking skills are generally higher than men's (Koçak, 2014).

It was known that internet supported teaching method was more effective on students' academic achievement than traditional teaching methods and had a positive effect on their attitudes towards science and technology class, questioning learning skills and concept perceptions. Furthermore, several studies in the literature show that social network-based learning environments (Ünal & Yerlikaya, 2021); science-technology-society approach (Çınar & Çepni, 2021); computer-assisted instruction (Nkemdilim & Okeke, 2014) and modelling-based conceptual learning (Okumuş, Koç & Doymuş, 2019) positively influence students' attitudes toward the related course or learning environment. These researches are consistent with our study and, in some ways, support our findings.

In terms of grade-level variables, there was a significant difference between the science teacher candidates' post-test scores on the chemistry achievement test in the experimental and control groups ($p=0.002<0.05$), with the difference favoring the third grade. Considering that third-year students have more academic experience than first- and second-year students, it is seen that the grade level variable is naturally more significant (Ültay, 2012). On the other hand, it is typical for the grade level variable of the third graders to be more significant in terms of the fourth graders being busy with activities such as graduation, teaching practice, and teaching proficiency exams. It was found that the post-test scores on the chemistry achievement test and the retention test scores of pre-service science teachers in the experimental and control groups had a strong and positive correlation. It is seen that the correlation results for both traditional and animation techniques are significant and positive. However, while the correlation for animation is about 75%, it is seen that the correlation found according to the traditional method is about 40%. These results are similar to many studies in the literature (Ağlarcı, 2014). In addition, similar to this study, some studies on chemistry education conducted with computer-aided teaching, including multimedia techniques such as animation, and presentation are shown below;

Daldal (2010) examined the effect of the computer-based method on students' academic achievement within the scope of the general chemistry course. It was stated that the experimental model was used in the study. Before the application, the readiness test was applied to the experimental and control groups. Gökçe (2015) examined the effect of the computer-based teaching method on the acids-bases unit and the impact on student's academic achievement, logical thinking, and attitudes. In the research process, quasi-experimental design, one of the quantitative research approaches, was used. As a result of the research, it was stated that the achievement and attitude scores of the

experimental group in which the computer-based teaching method was used differed significantly compared to the control group, and there was no significant difference between the logical thinking ability scores at the level of the groups. In his study, Çevik (2017) examined the effect of the states of matter unit on students' academic achievement using the computer-based teaching method using the 5E model. The research was carried out in 12-course hours for six weeks. When the achievement test results were examined at the end of the application, it was stated that the computer-based teaching activities developed according to the 5E model created a significant difference in favor of the experimental group compared to the traditional teaching and revealed statistical significance. Danacı (2018) examined the effect of teaching the particulate structure of matter with the help of animation on students' academic achievement. In the study, traditional instruction was applied to the control group, and teaching with computer-based instruction-supported animations was applied to the experimental group. As a result of the research, it was determined that animation contributed positively to the students' academic achievement (Su, 2022).

Pamuk (2018) looked at the impact of computer-assisted instruction on academic achievement and attitudes toward periodic systems and chemical bonds. The research was conducted using a semi-experimental design. As a result of the study, it was discovered that using a computer to teach students made a significant difference in their academic achievement. Simultaneously, it was stated that it made no difference to their attitudes. Within the context of human and environmental relations units, Akncı (2019) investigated the impact of computer-based teaching methods on academic achievement. According to the findings, computer-based teaching methods resulted in a significant difference in academic achievement compared to traditional methods. Ergün (2019) investigated the impact of collaborative computer-based teaching on academic achievement and attitude in his research. One of the experimental methods used in the research was a quasi-experimental design with a pre-test, post-test experimental control group. When the research findings were compared to traditional approaches, it was discovered that the collaborative computer-based teaching method did not affect students' attitudes. Ertan (2019) investigated the effects of using a computer-based teaching method to teach the subjects of meiosis and mitosis on students' academic achievement. According to the findings, using computer software to teach mitosis and meiosis is more beneficial than traditional methods. Taşkın (2019) investigated the impact of dynamic and interactive science instruction on student achievement.

Tombul (2019) used modeling and a computer-based teaching method to examine the learning products of secondary school 7th-grade students in astronomy. According to the study's findings, students in the experimental group had a significantly higher average than those in the control group. In his research, Tosun (2019) investigated the effects of computer-based instruction-assisted STEM education. The study included six students with special needs. As a result of the study, it was discovered that students' participation rates in science classes increased, and they developed a positive

attitude toward science classes. In his research, Battal (2020) looked at the impact of computer-based teaching methods on students' math achievement. As a result of the study, New Zealand was determined to have the highest rate of computer use among 4th and 8th-grade teachers, while China and Turkey had the lowest rate. When the achievement and retention test results of science teacher candidates are examined, it can be concluded that both the experimental and control groups are significant and positive, with the experimental group having a decisive advantage.

For permanent chemistry teaching, it is preferred that the information components (text, picture, sound, video) used in the course materials are especially rich in terms of visual and multimedia. In this context, animation, simulation, etc. It is thought that learning realized by using techniques is more permanent. In addition, it is known that practice-oriented courses should be given with a student-centered approach, and students should be guided rather than loaded with information. This is possible with better training of prospective science teachers.

A limited number of computer applications were used in this study. In this sense, it can be suggested to use alternative and current applications to support teacher candidates' computer and technology literacy. Since computers, the internet, and multimedia technologies increase transferring knowledge and persistence in the teaching process (Ayyıldız, Yılmaz & Baltacı, 2021). They can be used in biology, physics, and other fields besides chemistry. Animation, simulation, analogy, presentation, etc., should be used in new studies so that teacher candidates can use methods such as computer software, web 2.0/web 3.0 technologies (Yanarateş, 2021), multimedia applications more actively when they start their profession. They can give more space to such applications and activities.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Bilingual English Teachers' Perspectives on "English-only" Policies in an EFL Setting

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Abstract

Various language policies are implemented for foreign language teaching in educational institutions. One of these language policies is the monolingual approach called "English-only", which requires only the target language to be used in the classroom. This policy is largely implemented in private institutions in Turkey. Studies about teachers' perspectives on the English-only policy are relatively less. Hence, this research aimed to explore what the perspectives of bilingual EFL teachers working in schools where the English only policy is implemented are and what the effects of such practices are on their teaching methods and professional identities. A case study research design under a qualitative approach was adopted to explore eight bilingual EFL teachers' perspectives on language policies implemented in kindergarten and primary school of the private education institution where they worked. The results varied according to the professional background of the teachers and the department they worked. While language teachers who worked in kindergarten favoured the policy despite reacting negatively to the strict policies implemented by the school, primary school language teachers showed explicit resistance to the implementation of the English-only policy. Moreover, all the teachers expressed their uneasiness about being assigned fake English names and associated this with the impact of neoliberalism and other ideologies prevailing in the linguistic market on private institutions in Turkey.

Keywords: Bilingual teachers, EFL, the English-only policy, native speakerism, private institutions

DOI: 10.29329/epasr.2022.248.7

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Introduction

Language policies in foreign language education are affected mainly by three major language ideologies: "standard language, monolingualism, and native-speakerism" (Holliday, 2005; The Douglas Fir Group, 2016). Monolingualism was long acknowledged as the best and ideal practice of ideology in the field of English Language Teaching (Holliday, 2015; Kumaravadivelu, 2003; Macaro, 2001; Phillipson, 1992, 2013). The historical roots of "English-only" policy as the implementation of monolingualism date back to Direct Method that emerged against Grammar-Translation Method, and this policy encourages the use of the target language only (Sampson, 2012).

There is an ongoing debate about whether L1 should be used or not in foreign language teaching, and it has not reached an agreed conclusion (Debreli, 2016). According to the recent pedagogical approaches, an average use of the first language can support target language learning alongside with leading to a multicultural and multilingual identity formation of language learners (Rivers, 2011a). However, as McMillan and Rivers (2011) argue, "despite the preponderance of evidence clearly favouring judicious L1 use, 'English only' continues to enjoy hegemonic status in some teaching contexts, with students and teachers being prevented or dissuaded from using the students' L1 in ways that are, in fact, pedagogically principled" (p. 1).

Yaqubi and Poromoid (2013) state that even though the benefits of optimal first language use in L2 learning are suggested in theoretical research studies, these findings do not apply to real language learning contexts. Similarly, Cummins (2007) points out the inconsistency between monolingual instructional policies and current empirical evidence for "both of how people learn (Bransford, Brown and Cocking, 2000) and the functioning of the bilingual and multilingual mind (e.g. Herdina and Jessner, 2002; Cook, 2007)" (p. 222). There are also "external factors" that affect language choices of teachers. One of them is expectations of the institutions (Nagy, & Robertson, 2009). Therefore, this study aims to investigate the perceptions of bilingual EFL teachers about language policies implemented in their institutions. As Debreli (2016) points out, there are a number of research studies about the advantages and disadvantages of L1 use, while relatively less research has been conducted on the perceptions of bilingual EFL teachers who are obliged to following monolingual policies of institutions.

The present study investigates the perspectives of EFL teachers who work in a private school located in Turkey. Language education starts at second grade in public schools, while it starts in kindergarten in private schools, and the quality and quantity of language education differ to a large extent in Turkey. The number of English hours per week is 2 in public schools, whereas it can be up to 18 hours in private schools. The teaching materials are selected, and language teachers are hired according to the private institutions' own criteria. Therefore, one of the most important reasons of parents to send their children to private schools is their belief to get qualified language education

(Tatar, 2019). Some private institutions implement monolingual approach and hire "native speakers" to answer parents' needs. Interestingly, in some of the private institutions implementing an English-only approach, there is also a policy that requires "non-native language teachers" to use "pseudo-native" identities and introduce themselves as "native speakers" to students (Tezgiden-Cakcak, 2019). As students recognise their teachers as "natives", the institutions prohibit the usage of L1 in and out of school environment if students are around. Therefore, this study aims to find out the perceptions of bilingual EFL teachers on the monolingual and native speakerist policies implemented by the institutions and their effects on their teaching methods and professional identities.

Literature Review

The "English-only" policy is defined as the attempt of institutions to identify English as the only mediator of promoting interaction in the classroom and of giving instructions (Auerbach, 1993). This policy has been popular in language teaching because it is believed that "the more students are exposed to English, the more quickly they will learn; as they hear and use English, they will internalize it and begin to think in English; the only way they will learn it is if they are forced to use it" as a pedagogical framework (Auerbach 1993: 14-15). However, Auerbach (1993) states that the logic behind the English-only policy was not found pedagogical or conclusive as the evidence from research studies shows. Many scholars (Phillipson, 1992; Auerbach, 1993; Cummin, 2000; Rivers, 2011a, 2011b) argued that English language teaching, specifically in EFL (English as foreign language) contexts, is a political commitment as well as a linguistic one. Teachers are left powerless, dealing with the restrictions and imposed policies of institutions, while they are in search of the best strategy to serve better to their students (Rivers, 2011a). Fairclough (1989: 33) clarifies the issue as follows: "Institutional practices which people draw upon without thinking often embody assumptions which directly or indirectly legitimize existing power relations. Practices can often be shown to originate in the dominant class or the dominant bloc, and to have become naturalized". Rivers (2011a) points out the professional identity of teachers and argues that either accepting the institutional policies, or not having a desire to put additional efforts means that language teachers are missing the opportunity of forming a professional identity that is under their own control.

There are numerous studies about language policies (e.g., McMillan & Rivers, 2011; Debreli, 2016; Rivers, 2011a; Yang & Jang, 2020). One of them is conducted by McMillan and Rivers (2011) to investigate teacher attitudes toward language policy of English-only. Participants were 29 native speakers who were working in a private Japanese university where the monolingual language approach was adopted as the ideal language policy. Through the questionnaires, the results showed that despite the strict language policy of the institution, a significant number of teachers believed that there is a positive role of students' use of L1 in language learning and teaching. Moreover, the

researcher suggested that to what extend L1 would be used should be decided by the teachers and students due to the unpredicted context of classrooms.

Another research study was conducted by Hall and Cook (2013) to investigate the perceptions of language teachers about L1 use and to explore under which circumstances they deploy it in their classrooms. The researchers adopted a mixed-methods approach to depict a broad picture of a large sample of participants who were 2,785 teachers working in 111 countries. The results of study indicated that there is a widespread use of L1 in ELT due to the factors that affect L1 use and that teachers' attitudes towards using it are more complex than recognised.

Similarly, Rivers (2011a) inquired into learner autonomy in language choice and into its benefits for learners. To this end, 21 Japanese English learners participated in the study at a Japanese university, where a politically driven monolingual language policy was adopted. During the study, "English-only" policy was set aside, and students were encouraged to see how the use of their own language may be beneficial in the language learning process. The results were in line with the researcher's belief that when given linguistic autonomy and supported in making language choices, students own the responsibility of the afforded position.

Debreli (2016) investigated "non-native" EFL teachers' perceptions of the "English-only" language policy adopted by their institutions. Another focus of the study was the perceptions of teachers about the inclusion or exclusion of L1 in English classrooms. 54 "non-native" EFL teachers who worked in preparatory schools of 4 universities in Northern Cyprus participated in the study. According to results, all the participants were likely to use first language for various reasons. Moreover, it was found that being obliged to following strict English-only policies adopted by their institutions affected teachers in a negative way and caused restrictions in certain issues. The study suggested the development of the programs in institutions in favour of a wide variety of opportunities arising from code-switching and bilingual instruction.

Another study by Rivers (2011b) focused on the contradiction between institutions' promotion of learner autonomy and their restrictive language policies. 43 mixed-ability English language learners studying at a Japanese university participated in the study, and they were taught two reflective strategies to raise their awareness for being able to make language choices when they are faced with English-only demands in their language learning environment. The results indicated that for most of the learners the policy of English only was not a realistic target and that it might have caused many negative consequences.

There are also studies about professional identities of bilingual teachers. In a study conducted by Kim (2011), drawing on critical and identity theories, the perceptions of "non-native" English teachers about themselves as EFL teachers were investigated. Under a critical theoretical framework,

they examined how identities of "non-native" speakers were affected by the ideology of native-speakerism. The qualitative case studies provided evidence for the existing influence of the ideology of native speakerism, which led to a low professional self-esteem for "non-native" English teachers.

Tajeddin and Adeh (2016) focused on perceptions of "native" and "non-native" English teachers about their "native/non-native status" and the advantages/disadvantages of having these statuses. Through the collection of data through a mixed-method research design, 200 "native" and "non-native" English language teachers from countries which are in inner, outer and expanding circles participated in the study. The findings showed that a great majority of "non-native" teachers were not aware of their status when compared to "native" teachers and that they lacked self-confidence. They believed that "native speaker" English teachers had better pronunciation, better speaking proficiency, and greater self-confidence. On the contrary, "native speaker" teachers did not agree on having a superiority on "non-native" teachers. The study suggests the expanding-circle countries should integrate resources into their teacher education programs to raise awareness of teachers about their professional role and status and to inform them about native speaker fallacy.

In another study, Butler (2007) investigated perceptional factors that underlie the belief that "native English speakers are the ideal teachers", which has been adopted by a significant number of "non-native" English teachers in East Asia. 112 Japanese elementary school teachers participated in the study, and they were asked to conduct English activities in their classes. Several factors were framed based on the teachers' perceptions and beliefs through a detailed questionnaire. Most of the teachers conducting the activities accepted the idea that English is best taught by native speakers in elementary school. The study associated this belief with "their self-assessed English proficiency levels, their attitudes towards nonstandard forms of English, and their sense of pride in their own language and cultural heritage" (*ibid*.: 25-26).

Yang and Jang (2020) conducted a study with the premise that aggressive adaptations of the policy of English-only in EFL classrooms are ideologically driven. The study pointed out the interpretation, valorisation and challenges of the English-only policy in and out of classroom by Korean bilingual teachers who worked in a private school. The bilingual teachers showed different reactions to the policy of the school which required them to stick to English-only in terms of students' usage of their L1, implementing the policy beyond the classroom. The study revealed that "the teachers' everyday practice of the English-only policy is a complex process of negotiating interconnected ideologies and identities related to native-speakerism, gendered nationalism, and professionalism" (*ibid*.: 1).

A similar study by Yaqubi and Poromid (2013) displayed the language choice of English language teachers at a private institution through surveys and interviews with both teachers and parents. It was found that they had negative attitudes towards the usage of L1. Moreover, parents were

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dissatisfied with the usage of L1, and they threatened the institution with sending their children to another one and affected the language policy of the institution.

Drawing on Yang and Jang's (2020) and Yaqubi and Poromid's (2013) studies, in the present study we aim to critically investigate bilingual EFL teachers' perspectives on the native speakerist English-only policy adopted by the private school they work. In the literature review, to the best of our knowledge and as observed by Selvi (2014), there is no research about private institutions' language policies and teachers' perspectives on it in the Turkish EFL context. To fill this gap in the literature, this study attempts to find out bilingual EFL teachers' perspectives on the English-only policy that was implemented strictly in a private school.

Methodology

A case study research design under a qualitative approach was adopted in this study to explore bilingual EFL teachers' perspectives of language policies implemented in the private school they worked. As Bryman (2004) suggests, qualitative methodologies are better to collect data about opinions, thoughts and perspectives from participants in a study. Therefore, a qualitative research methodology was selected to conduct this study.

Research Questions

The present study aims to answer the following questions:

1. What are the perceptions of bilingual EFL teachers about the English-only policy adopted by their institutions?
2. What are the effects of the English-only policy on bilingual EFL teachers' professional identity?

Participants

The demographic information regarding participants is shown in Table 1 below.

Table 1. The Participants' demographic information

Participants	Gender	Age	Background	Experience Period	Department
T1	Female	26	German Language Teaching	2	Kindergarten
T2	Male	24	ELT	3	Primary School
T3	Female	22	ELT	1	Primary School

T4	Female	30	German Language Teaching	6	Kindergarten
T5	Female	25	ELT	3	Primary School
T6	Female	27	German Language Teaching	5	Kindergarten
T7	Female	26	English Language and Literature	2	Kindergarten
T8	Female	27	ELT	4	Primary School

Eight bilingual EFL teachers working in a private school in Eastern Turkey participated in the study. Four of them were working in kindergarten, while four of them were working in primary school. The school also had middle and high schools in its campus, but since the language policy was strictly implemented in kindergarten and primary school, the teachers who worked there were selected to serve the purpose of the study best. Seven of them were female, and one of them was male. Their age range was between 22 and 30. There were novice teachers as well as more experienced teachers (with a maximum of six years of experience) among the participants. Informed about the purpose of the study and the ethical procedures such as keeping their anonymity and using the interview data just for the research purposes, they gave their consents to participate in the study. The acronyms such as "T1, T2…" for teachers are used for ensuring their confidentiality throughout the paper.

Data Collection

The present study was designed through a qualitative research methodology. In order to collect detailed data, semi-structured interviews were chosen as the data collection instrument. Through semi-structured interviews, the perspectives, views and thoughts of participants are investigated better since there is an oral interaction that occurs in a meaningful context (Bryman, 2004). Semi- structured interviews are also flexible and give researchers the possibility of asking follow-up questions to obtain detailed data (Kvale, 2007; Patton, 2002).

Data Analysis

The semi-structured interviews audio-recorded and transcribed through an online transcription tool were analysed via thematic analysis. Thematic analysis is defined as "a process that involves coding and then segregating the data by codes into data clumps for further analysis and description" (Glesne, 2006: 147). To collect detailed interview data in a more natural and comfortable atmosphere, the questions were asked in the participants' first language. Therefore, the transcribed data were translated into English, and the extracts were examined for several times to clarify certain themes and patterns.

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Findings

In this section, the findings obtained from the thematic analysis of interviews with eight bilingual EFL teachers are presented. Bilingual EFL teachers' perspectives on the native speakerist "English-only" policy reflected a blend of supporting and critiquing views, revealing some implications of the strictly implemented policy including advantages and disadvantages. Secondly, the effects of the English-only policy on bilingual EFL teachers' professional identity were evident in their accounts of the classroom practices shaped by the policies forcing them to adopt a "native speaker" identity.

Bilingual EFL Teachers' Perspectives on the "English-only" Policy

Two different views about the English-only policy were outstanding in the findings from the interviews. The teachers who worked in kindergarten advocated the policy and stated that they found it useful, while the teachers who worked in primary school made a critique of it and made it clear that this policy had both positive and negative sides. To represent the majority, two teachers' (1 from kindergarten- T1, 1 from primary school- T2) views were given below:

> *I definitely find it useful. It is my second year here. In the beginning, we thought we would have a hard time last year. Actually, we had a lot of trouble in communication, but towards the end of the semester, when I realised that the children understood me well, of course, I thought it was useful and decided to go further. Now, we can see their development very clearly. In fact, the language is learned by exposure, and I think this system is extremely useful.* (T1)

> *It depends. Regarding in-class activities, it's good to have just the target language, but concerning student-teacher relations, the application lacks many things. I think it is not useful all the time. Because your students' background can be different, when you speak only English to students, you can have communication problems. In our institution, we are speaking only English, and because of that we have some problems. For example, students sometimes misunderstand us or they may not want to speak because they cannot speak.* (T2)

When the teachers were asked about the advantages and disadvantages of the English-only policy in terms of classroom implications, kindergarten teachers focused on only advantages, while primary school teachers concentrated on both. T4 stated the advantage of the policy as follows:

> *Because the teacher is a role model and because we expose the child to the language constantly throughout the day, somewhere the child is inevitably and automatically becoming the receptive of the target language, and this brings a great advantage to him/her.*

T3 pinpointed that the implementation of the policy has both advantages and disadvantages:

> *Of course, as an advantage of the English-only policy, I taught my children many new words in the classroom. Because we use some word patterns, children can pick it up. Due to their age, their minds are very clear. Apart from that, they try to speak English- this is a fact. You know, even if the grammar is wrong, they try to speak because they think you only know English. In this respect, it has good sides, but in my opinion, the disadvantages are a bit more than advantages because, as I just mentioned, the child is afraid to communicate as they think that they cannot communicate with me, so the disadvantages cause more problems for me in terms of building rapport with students and classroom management.*

The results showed that the biggest advantage was the exposure to the target language, where having difficulty to teach difficult topics and building rapport with students were among the disadvantages according to the participants.

The teachers were asked about to what extent the English-only policy was implemented in their institution and whether any strict rules existed. It was stated that the institution had very strict rules and that the teachers were not allowed to speak L1 inside the school and outside the school if they came across with a student. Moreover, the institution introduced language teachers as "native" teachers to students in order to ensure speaking only the target language. The extracts below show how strict the language policy is:

> *We have to speak only English with the students. Once, one of my students' parents came to visit me. I had to use a Turkish word for the parent. I was warned that we need to speak English even with the parents. This is a bit of a wrong attitude in my opinion. I had to postpone my meeting with the parents since students were around, which could damage the parent-teacher relationship.* (T2)

> *Yes, the rules are so strict that I am most of the time afraid of one of the administrators or even of the other teachers who would hear me speaking in Turkish. They even want us to speak English when we see our students outside the school.* (T8)

When teachers were asked whether they would use this monolingual approach if it was not imposed by the institution, kindergarten teachers responded positively. However, primary school teachers stated that they would mostly use target language but benefit from L1 too whenever necessary.

The Effects of the English-only Policy on Bilingual EFL Teachers' Identity

The emerging data from the interviews showed how the teachers' professional identities were affected by the strict policy of their institution. In line with their preference of (not) having a monolingual approach, kindergarten teachers and primary school teachers showed different ways of

positioning themselves in relation to their personal and professional identities. For kindergarten teachers, the policy was the ideal one, and they did not feel like under pressure.

> *The situation is like this; in fact, we have a group of English language teachers. We have monthly meetings. If we have a request, a complaint or a situation we want to change, we talk about it with our coordinator, then we talk with our manager, so we try to find a common point.* (T1)

However, primary school teachers stated that they were affected negatively by the policy:

> *Most of the time I don't even feel like a teacher. I am an English machine. I don't feel free to do what I think is true, which makes me uncomfortable about what I do.* (T5)

> *Yes, I feel like I am under pressure, and it affects my teaching too. I cannot apply my techniques and strategies, so it is not good for me.* (T8)

The teachers had different views regarding the monolingual approach to language teaching. Nevertheless, when it comes to adopting a "native speaker" identity, all of them stated that they did not find the usage of native speaker identity useful. T5' s views about this identity policy represent a common point for all teachers:

> *It is like I am doing somebody else's job. It makes me unhappy about my job because my students don't call me by my name. I don't feel I belong to and fit in here. Once, one of my students called me by my real name, and it was a great happiness for me. Also, I love sharing memories with my students, but this identity-hiding restricts me in this respect. They are highly curious about my life outside the school, but I can't share like 85% of my normal life with them, and this creates distance between us, thus affecting the rapport building process.*

Moreover, T2 focused on how this policy affected the building of trust between teachers and students:

> *Well, I think this is a bit of a distrust because think of a closed environment, school environment, we are human beings, and we can make mistakes at any time- we are not robots-. For example, I can say something in Turkish to someone in the corridor and may not notice a student at that moment. It happened to me once, and the student started to say: "Brad Teacher speaks Turkish, but we were not told that. He is not a foreigner. He is Turkish. This was a distrustful thing for the student, so I went through the trouble of this, and it put me in a difficult situation. I think acting like a native is not necessary. There is no need to make such a claim to children and provoke them because they are constantly chasing us and waiting to catch us speaking Turkish.*

Most of the teachers believed that the ideology behind the policy of the institution was related to marketing purposes. They stated that it was normal for private institutions to adopt this kind of policies since they need to attract parents, claiming that they had good language education system. When parents' attitudes towards this policy asked, the teachers stated that they were quite satisfied with the policy, and this policy was an important factor for them to choose this school.

Discussion and Conclusions

In this study, bilingual EFL teachers' perspectives on the English-only policy were explored through semi-structured interviews. The participants were eight bilingual EFL teachers who worked in a private school where the policy of English-only was adopted. The school implemented the language policy strictly, in that the teachers had to use "pseudo-native" identities and speak only English with everyone even with the parents when they came to the school. Half of the participants were language teachers who worked in kindergarten, while the other half were the teachers who worked in primary school. The findings were interesting because there was a distinction between the perspectives of both groups.

In general, the language teachers of kindergarten favoured the policy and had positive attitudes towards it. Moreover, they merely criticised the strict policies implemented by the school. Similarly, in Yaqubi and Poromid' s (2013) study in Indonesia, it was suggested that the teachers who were in favour of the language policy were mostly inexperienced novice teachers, lacking sufficient inner criteria for teaching and being more vulnerable to external factors. On the other hand, primary school language teachers criticised the policy more than the former group. They mostly focused on the negative aspects of the strict policy. This distinction may be because of the professional background of the teachers. The kindergarten language teachers had German Language Teaching as their bachelor's degree and worked with an English certificate which enabled them to work in private institutions, while primary school language teachers were graduates of English Language Teaching. This difference regarding their professional background may affect their views, in that primary school teachers had more professional independency and approached more pedagogically to the implemented policy than the other group. As Yang and Jang (2020: 11) point out, "individual teachers negotiate English-only policy according to their linguistic and professional identities". Rivers (2011a) sees accepting the norms and policies of institutions as the ideal practice without questioning them as a threat for sustainability of the profession of language teaching.

The implementation of the English-only policy revealed that primary school teachers in the present study did not find it useful to speak only L2 in case they need to clarify difficult topics and build rapport with students. This result is in line with the findings of Debreli's (2016) study, in which teachers needed L1 to teach difficult topics and socialise with students in the classroom. Similarly, studies conducted at state universities or schools in the Turkish EFL context (Kayaoğlu, 2012;

Kılavuz, 2014; Kuru and Tekin, 2019; Şavlı and Kalafat, 2014; Şener and Korkut, 2017; Şevik, 2007; Timuçin and Baytar, 2014; Yıldız and Su-Bergil, 2021) and international studies conducted in China (Tang (2002), Czech Republic (Koucká, 2007), Puerto Rico (Schweers, 1999), and Saudi Arabia (Alshammari (2011) reported on the support given to the use of L1 in language classrooms by EFL teachers, teacher trainees, and students. However, in the present study, the language teachers who worked in kindergarten supported the policy strongly as it meant more exposure to the target language, and this result also correlated with the findings of the studies by Manara (2007) and Yaqubi and Poromid (2013). As Auerbach (1993) states, the ideology behind this policy was the monolingual approach that favours the use of L2 over L1, while she argued that this policy was not pedagogical. In another recent study (Yuvayapan, 2019) in the Turkish EFL context, EFL teachers at state and private schools did not resort to translanguaging which is the systematic use of L1 and L2 together in language teaching activities frequently though they had positive beliefs about this pedagogy in some situations. The gap between their perceptions and practices were attributed to the institutional and parental expectations in favour of monolingual practices (*ibid*.).

With regards to adopting a personal and professional language speaker identity, all the teachers reacted negatively to hiding their identity as a bilingual teacher of English as Turkish citizens. They stated that it had no benefits for language teaching and learning. They had a common point that this was for marketing purposes since the private institutions needed to attract parents. As Rivers (2011a) states, institutions which possess power have control over the political aspects of language teaching by using employment contracts and political imposes. Teachers are pressurised by the restrictions and imposed policies of institutions. These restrictions affected professional identities of teachers negatively as they did not actively participate in decision making process and since their pedagogical backgrounds were not taken into account.

This study aimed to investigate the perceptions of bilingual EFL teachers towards English-only policy. The results varied according to the professional background of the teachers and the department they worked. For further studies, the focus can be on only one group of teachers who work with similar age groups. Moreover, obtaining data from parents can contribute to understanding different dimensions that affect private institutions' language policies at the macro level.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Teacher Performance Evaluation System in a Private School: A Case Study

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Abstract

The purpose of this research was to reveal how the performance evaluations of teachers in a private school were made and the results of those evaluations. The research was designed as a case study, which is one of the qualitative research methods. The research was carried out in the 2013-2014 academic year. The participants of this research were 15 teachers, 3 administrators, 6 students and 4 parents. The data were obtained through semi-structured interviews. Findings revealed that the performance evaluation of the teachers were based on the surveys from students, school administrators and parents, general observations made by school administrators, course inspections and follow-up with digital cameras. In this context, teachers were awarded during the year and at the end of the year depending on their performance evaluation results. Participants also mentioned some positive and negative consequences of the performance evaluation in the school. The rewards given vary based on the performance of the teachers. The main rewards were as follows: salary increase, plaques and certificates with symbolic value, and contract renewal. On the other hand, teachers were punished due to their low performance. The consequences of the punishment were as follows: verbal or written warning penalties, low pay raise in salary, termination of some duties at the school and non-renewal of contract/dismissal.

Keywords: Performance evaluation, Accountability, Private school

DOI: 10.29329/epasr.2022.248.8

The data obtained from the 4th research question of the doctoral thesis titled *Teacher Accountability: Case Study in a Private School*, which was completed in 2015 under the supervision of Prof. Dr. Ahmet Aypay, was used in this article.

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Introduction

Recent years have witnessed the effects of neoliberalism in education as in every field. This efficiency and market-based approach have brought with it different expectations at every level of education (Dahlstedt & Fejes, 2019; Espinoza, 2017; Press et al., 2018; Torrance, 2017). Accordingly, accountability in education and performance evaluation processes are becoming increasingly important in order to improve education and increase student success (Cochran-Smith et al., 2017; Flores & Derrington, 2017; Ehren & Perryman, 2018; Holloway et al., 2017; Hoy & Miskel, 2010; Kim, 2018; Ozga, 2013). Moreover, these processes occur in many educational institutions. Furthermore, evaluations in schools shows examples of efforts to establish strict performance and accountability standards to meet the high expectations of society in education (Fusarelli & Johnson, 2004).

On the other hand, efforts to set standards have paved the way for the private sector in many developing countries with the new public management approach (Cope et al., 1997; Çevikbaş, 2012; Hood, 1995). Since this approach is based on entrepreneurship and competition, it accelerated the development of private institutions (Kurt & Uğurlu, 2007). Therefore, supporting the private sector in increasing productivity has begun to be seen as an opportunity (Özer, 2005). Unsurprisingly, many sectors, including educational institutions, have started to evaluate the performance of employees in line with different corporate purposes (Cleveland et al., 1989).

For the first time in Turkey, transition to the performance evaluation system in the public sector was proposed with the Eighth Five-Year Development Plan. It is therefore clear that preparations for the transition to the performance evaluation system in schools have started and pilot studies have been initiated in some schools (Altun & Memişoğlu, 2008). The purpose of performance evaluation is shown as increasing the performance of the employees, ensuring efficiency and increasing the quality of the service provided (Yılmaz & Turan, 2019). As a matter of fact, increasing the quality of education is possible with effective planning of qualified human resources (Öztaş & Gürcüoğlu, 2018). In particular, performance evaluation in schools provides feedback on the educational decisions to be taken by the school administration and makes it easier to determine whether certain institutional standards have been reached (Çelebi et al., 2018; Erdağ & Karadağ, 2017).

It is obvious that the evaluation of teachers' performances in order to establish certain standards in schools contributes positively to teaching (Murray, 1997). Therefore, performance evaluation of teachers attracts the attention of education stakeholders all over the world (Flores & Derrington, 2017; Liu et al., 2016). In this context, private schools, which have to maintain entrepreneurship and competition, attach importance to improving the quality of their teachers (Ford et al., 2018). Since low teacher qualification is shown as the most important reason for low school

performance (Ingersoll & Collins, 2017), private schools want to perform the performance management of teachers in the best way. For this purpose, different methods are adopted to evaluate the quality of teachers in private schools and to ensure the development of teachers (Ford et al., 2018).

A sizeable literature on the performance evaluation of teachers in Turkey is mostly carried out by referring to the opinions of teachers and administrators in public schools (Altun & Memişoğlu, 2008; Bozan & Ekinci, 2017; Konan & Yılmaz, 2018; Topuz & Yılmaz, 2019). However, since the number of studies conducted in private schools is limited; it is recommended to focus on studies to be conducted in such schools (Sağbaş & Özkan, 2019). This study is important in terms of revealing the practices for performance evaluation of teachers in private schools where competition is quite high, and showing the performance evaluation processes. Explaining the details of teachers' performance evaluation will contribute to the field of educational administration. Therefore, this study examined how teachers' performance evaluations were made in a private school.

Private Schools in Turkey

Education and training institutions that plan their own budgets and expenditures are called private schools (Uygun, 2003, p. 108). There are four different types of private schools operating in Turkey according to the Law on Private Education Institutions. These types of private schools are: (i) Schools opened by Turkish nationals (ii) Schools opened by foreigners (iii) Minority schools (iv) International private education institutions (Kulaksızoğlu et al., 1999). These private schools are established by locals or foreigners; and they provide education within the framework of legal regulations (Uygun, 2003). Private education institutions can be opened with the permission from the Ministry of National Education. The qualifications and conditions of the personnel who will work in these institutions must be the same as those working in the official schools of the Ministry of National Education. Private schools, with exceptions, apply the relevant curriculum of the Ministry of National Education (Kulaksızoğlu et al., 1999). The government encourages private schools at all levels of education. These schools are expected to meet the quality education expectations of the society by providing competition in education (Uygun, 2003, p. 107). According to the statistics of the Ministry of National Education for the 2019-2020 academic year, a total of 1,468,198 students receive education in 13870 private education institutions in Turkey; and 174,750 teachers work in these schools (MEB, 2020). Therefore, the burden of public education in education can be reduced by opening private schools. However, it is not suprising that private schools can set an example in increasing the quality of education with their innovative practices (Özdemir & Tüysüz, 2017). Since private schools choose their teachers, they may also prefer to employ teachers with master's and doctorate degrees. Moreover, when compared to public schools, private school students have a higher university admission rate (Erdoğan, 2002). However, such findings can be misleading where school effectiveness is not measured. The rapid change process in all areas of the world paves the way for

private schools due to their entrepreneurial structure. In this respect, there is a growing argument that private schools can be a solution to the schooling problem in Turkey (Parlar, 2006, pp. 18-19). It is clear that private schools need qualified teachers in order to be competitive. In private schools, different methods are adopted to evaluate the quality of teachers and to ensure the development of teachers (Ford et al., 2018). However, due to competition in private sector, measures should be taken regarding the occupational safety, working conditions, wages and social and psychological health of teachers in private schools (Çimen & Karadağ, 2020; Sever & Aypay, 2014).

Performance Evaluation of Teachers

The radical changes experienced in the fields of economy, politics and culture in the world have led to an increase in social expectations in education (Nartgün & Kaya, 2016). These rapid changes have also led to the emergence of processes for ensuring accountability in education, school reforms and effectiveness in school (Şişman, 2011). This situation has caused formation of different performance evaluation systems. Therefore, demanding accountability in the private sector is closely related to meeting the expectations of stakeholders (Gaventa & McGee, 2013, p.2).

Since the 1980s, parents started to prefer private schools with the expectation of a better education (Açıkalın, 1989). The characteristics and qualifications of teachers in private schools are also cited as a reason for this demand (Hesapçıoğlu & Nohutçu, 1999). As a striking example of this is that parents want their students to gain a good university in line with their high career expectations (Erdoğan, 2002). Private schools, which have to meet these demands, want their teachers to be highly motivated and expect them to provide qualified and high-quality education (Kocabaş & Karaköse, 2005). Accordingly, administrators working in private schools exhibit a higher level of leadership (Aslan & Ağıroğlu Bakır, 2014; Birekul, 2018) and take on more responsibilities (Karaköse & Kocabaş, 2006; Topçu, 2010).

The fact that the influence of the teacher on student learning is frequently emphasized in many international publications has increased the interest in teacher quality and evaluation (Paufler et al., 2020; Tuytens & Devos, 2017). Schools perform performance evaluation by making teachers accountable (Reinhorn et al., 2017). Evaluation of teacher performance is carried out to measure teacher quality and to support teachers' professional development (Ford et al., 2018; Lillejord et al., 2018; Looney, 2011; Su et al., 2017). For this reason, different tools and methods are used to evaluate teachers' performance and to measure how teachers contribute to student learning and success over time (Amrein-Beardsley & Holloway, 2019). Models and methods such as 360-degree feedback system (Kantos, 2013), school principals' observations (Grissom & Bartanen, 2019) and students' evaluations of teachers are frequently applied (Finefter-Rosenbluh, 2020; Moran, 2017). Indeed, it is argued that student learning can be facilitated when the necessary importance is given to

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teacher performance evaluation by creating an environment of trust in the school (Donaldson & Firestone, 2021).

However, it is possible to see some implementations that are criticized in the evaluation of teacher performance in schools (Derrington & Campbell, 2018). It is known that school leaders spend a significant amount of time on teacher evaluation. While some of the school principals think that allocating this time for performance evaluation, observing and providing feedback to teachers is an important skill, most of them think that evaluating teachers' performance is a waste of time and hinders their work (Lavigne & Chamberlain, 2017). This supports the perception that the discretionary evaluation processes used by school principals in the evaluation process are made perfunctorily (Donaldson & Woulfin, 2018). In addition, in systems where teachers are evaluated according to the academic performance of their students, teachers' motivation decreases (Cuevas et al., 2018; Erichsen & Reynolds, 2020). For this reason, it is necessary to make alternative applications to uniform assessment methods based only on student results (Paufler et al., 2020). On the other hand, discussions have increased over the inadequacy of different teacher performance evaluation systems. Discussions continue that these assessments cannot distinguish qualified teachers (Steinberg & Kraft, 2017).

There are some other opposing views on this matter. These evaluations are criticized because they create resistance in schools and reflect very poorly the multifaceted work of teachers (Storey, 2002). Considering the reasons that lead to criticism of performance evaluation, they are based on quantitative measures rather than qualitative measures. Quantitative evaluations have a negative effect and affect motivation negatively (Kallio & Kallio, 2014). Teacher evaluation processes fall short of evaluating professional competencies and harm the professional identity of teachers (Bradford & Braaten, 2018). However, although the reasons such as job loss, termination of duty or salary cuts that may arise as a result of teachers' performance evaluation are criticized, contrary to what is thought, it is also shown as the primary motivation source in the professional development of teachers (Ford et al., 2017).

Method

Research Design

This research was designed as a case study, which is a qualitative research method. In order to examine how the performance evaluations of teachers in a private education institution are carried out, interviews were conducted with teachers, administrators, students and parents in the 2013-2014 academic year.

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Study Group

The participants of this research were 15 teachers, 3 administrators, 6 students and 4 parents. The purposeful selection of the participants includes the decision-making processes related to the sample in order to obtain more detailed information in the interviews (Cresswell, 2007; Neuman, 2010). Therefore, the researcher determined the participants according to certain criteria in the private high school where the research was conducted. People who met these criteria were asked whether they volunteered. Participants who voluntarily participated in the study were included. After the participants were given detailed information about the interview process, interviews were conducted.

Data Collection Tool

Since a holistic analysis is made in case studies, several different data collection tools can be used. Therefore, interviews, observations and document analyzes are frequently used in case studies (Yıldırım & Şimşek, 2008). Since this article was carried out within the framework of a single question of the doctoral study, especially the data obtained as a result of the interview was taken as a basis. A semi-structured interview was used within the scope of the research. Due to the complex nature of schools, case studies are preferred in many studies in the field of education (Merriam, 1998). In addition, case studies allow the researched subject to be examined in more detail (Yıldırım & Şimşek, 2008). The interviews were held at the places and times that the participants deemed appropriate, after appointments were taken from the participants.

Data Analysis

According to Yin (2009), researchers analyze data in line with the analysis strategies they have determined. Some of the techniques performed in the analysis process are as follows. (i) Arranging and sorting the data appropriately (ii) Sorting the data into appropriate categories (iii) Sorting the events within the scope of the research in a certain order. Within the scope of this research, firstly, the records obtained from the interviews with different participants were transcribed. Then, the answers given to each question were read and the important concepts were determined as codes. Then, codes were created by repeatedly reading the data in each main section. Categories were created from the generated codes and themes were revealed based on these categories. Finally, comments were made based on themes.

Reliability and Validity of the Data

In this study, interviews were conducted with different stakeholders (teachers, administrators, parents and students) in line with the processes stated by Yin (2009) regarding validity and reliability. Data obtained from different stakeholder participants were explained as supporting evidence for each other and descriptions were made. In addition, the opinion of a field expert on the comments of the interviews was sought.

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Findings

In this section, there are findings about the performance evaluation processes of teachers. Since the researcher was constantly observing within the institution, he also stated some relevant situations in the findings.

Findings on the Performance Evaluation Process

When the participants were asked how the performance evaluation was made, it was seen that the participants first mentioned the surveys. When the interviews were examined, it was revealed that the teachers were evaluated at least once a semester through surveys. Thus, the stakeholders who answer the surveys score the questions asked about the teachers. With the average score of each teacher, the ranking of the teacher in the whole school is determined. This ranking is published on the school's official website. Different participants mentioned the following in their statements about the implementation of the surveys:

> Teacher 12: "Performance evaluation is done by survey method separately in the 1st and 2nd semesters of the school."

> Teacher 10: "There are surveys filled by parents and students. There are surveys that administrators fill out about teachers."

The explanations of Teacher 12 and Teacher 10 reveal when the surveys were conducted, and which stakeholders evaluated the teachers. On the other hand, in the statements of Teacher 9, it was pointed out that the surveys were administered over the internet. The statements of Student 1 and Parent 1 confirm the teachers' statements. Parents state that they were asked to make an evaluation on teachers. It is seen that the surveys to evaluate the performance of teachers are filled separately by parents, students and school administrators:

> Teacher 9: "Surveys are being conducted. All the students answer the questions about us. They do this on internet-based programs. Scoring is done online."

> Student 1: "For example, there are some forms on the internet; about teachers…. we can answer in the form. "

> Parent 1: "At the end of the semester, they give us surveys. We evaluate teachers' performance. They can also call us on the phone to remind the surveys. So we do it. These provide an opportunity to evaluate the performance of teachers."

As a matter of fact, Administrator 1 also points out that teachers are scored quantitatively, drawing particular attention to scoring:

Administrator 1: "First, a survey is prepared for the students. Those surveys are opened to students. They evaluate between 0 and 100."

Participants stated that their superiors in the hierarchy made general observations and evaluated teachers based on some criteria. It is understood that these general observations cover evaluations in different fields related to many criteria related to education. From the statements of the participants, it was seen that many factors that are both disruptive and positive were evaluated. Also, general evaluations play an important role in the formation of a general opinion on the renewal of teachers' contracts, which is held at the end of the year. Different participants expressed this situation as follows:

Teacher 7: "So first of all, the coordinators evaluate the teachers. Those current performance criteria are evaluated there. The teacher's contributions to the group, teamwork are evaluated. Collaboration, the materials he/she applies in the classroom, that is, all events related to his/her own branch in a very broad sense are noted by the group coordinators."

Teacher 9: "They try to take note of everything that happens. Of course, this is related to the point of view of the administrators. They then evaluate them on a person-to-person basis, evaluate what they have written rather than what they remember, according to the criteria set by our school. They make their decisions about whether they will work with the teacher the next year."

Teacher 3: "The person who observes and follows us is either our coordinator, our assistant principals or the principal. Based on all quantitative data such as the duration of the smart board recordings, our classroom management, they reach a successful or unsuccessful conclusion about the teacher at the end of the year."

Administrator 2: "We observe everything. The monthly reports to be submitted should be prepared on time. We observe how they communicate with our students'parents. "

Participants stated that another important pillar of the performance evaluation process is the supervision of teachers' lessons. It was stated that the course follow-ups were made especially by the department coordinator. From the statements of the participants, it is obvious that teachers' file control was also carried out in addition to following the course. Therefore, a lot of importance is given to the students' development, such as the nature of the homework.

Teacher 10: "This is mostly done in the form of watching a lesson in certain periods, watching a lesson of each teacher."

Teacher 4: "They come and watch our lessons from time to time.."

Teacher 1: "The coordinator monitors each of his/her teachers in this school; one or more times during the semester."

Teacher 11: "The coordinator himself/herself can come to our lesson and be a guest."

In the statements of the participants, it is understood that another method used from the performance evaluation of the teachers is tracking/monitoring with cameras. The recordings are made with the cameras with audio and video, and 24/7 digital monitoring is done. It has been revealed that especially when some positive or negative events about a teacher are received, camera recordings are watched in order to confirm this situation. Accordingly, it was also reflected in the statements that teachers were given feedback from time to time:

Teacher 4: "We have cameras in our classrooms. With the help of cameras, they watch you at any time."

Teacher 11: "The lessons are followed by the cameras in the classroom that record audio and also record images. Feedback on these is given to us."

Teacher 9: "Administrators make instant observations through the doors in the classroom, and they can observe all of our lessons moment by moment because there are cameras in our classrooms."

Teacher 10: "But as I just said, if they want clarify or understand some certain things, the lessons of that teacher about a teacher can be watched a little more than others."

Teacher 5: "While the monitoring in the classroom was taken with the camera before, now there is audio-video monitoring. Sometimes this is not enough. The coordinator can come to the lesson and watch you. They want to know how the classroom management is. "

Participants are also aware of the fact that teachers are being watched, and they think that living with this feeling is contrary to educational psychology.

Teacher 13: "For the last 2 years, our monitoring has been done in our buildings, especially with the camera system. We have both in our classrooms and in the corridors, in our rooms, everywhere. Because there are cameras everywhere…. We feel that the school is like someone is spying on us."

It is clear from the statements that the evaluation of the performance of the participants at school has some positive results. Accordingly, it has been stated that teachers who get high scores or show high achievement in certain fields as a result of the evaluations made during the academic year are awarded; and these awards are given to the relevant teacher on some special days. The awards are

sometimes symbolic. Also, contract renewal at the end of the year is perceived as an important form of reward by the participants:

> Teacher 10: "They give points to the teachers. Teachers who have high scores are awarded. We are private school. Contracts are made every year. If some evaluations about you are insufficient, this may be reflected in your raise rate."

> Teacher 9: "They give plaques and monetary awards on teacher's day to a few people"

> Teacher 8: "On a teacher's day, plaques are given. Moreover, a reward is given if a teacher's project has received a degree in national competitions. If he/she has a degree in Turkey. "

An administrator stated that awarding teachers based on performance evaluations increases motivation at school, and that this reward, even if it is symbolic, is meaningful as follows:

> Administrator 2: "We are talking about the motivations of the teachers. Sometimes we take some of the meetings as an opportunity and present a document to our teachers in order to award the good activities they have done so far. Maybe, it is a certificate of achievement, but still it is important."

Participants also mentioned some negative consequences of performance evaluation. They stated that teachers were frequently exposed to warnings during the evaluation process. According to this, coordinators of the departments intervene in the wrong behaviors of the teachers in the school. However, the process gains a new dimension with verbal and written warnings with the involvement of the principal and assistant principals in situations that persist despite reminders and are not corrected. These warnings are processed in TTS (Teacher tracking system). The warnings recorded in the TTS are considered together with other performance evaluation elements and affect the decision to be made about the teacher at the end of the academic year. As a result, it may cause teachers to receive a lower raise in the new contract, to be dismissed from some senior positions at the school. Also teachers can be fired by terminating their contract. It is seen that such situations are perceived as ordinary events in the routine of a private school.

> Teacher 1: "For example, the teacher may have some inadequacies. He may have inadequacies in classroom management. First, guidance is given about what should be the right behavior. Then, they may warn you."

> Teacher 2: "During the academic year, from your coordinator, you get feedback. If there is something wrong, they warn you."

> Teacher 11: "For example, if there is a problem with your presentation on the smart board you are warned directly."

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Teacher 4: "They warn you. They remind your responsibilities if you fail to do them."

Teacher 7: "So, if there is a problem, let's say the teacher hardly manages the classroom, administrators talk to the teacher and warn. "

School administrators confirm the statements of many participants. It is stated that they warned teachers and these warnings are very common. When the statements are examined, it is understood that teachers with less professional seniority are exposed to more warnings. In addition, the contracts of inexperienced teachers are more terminated at the end of the year. On the other hand, these intense warnings may be related to many issues; from simple actions like coming to school a little bit late, to serious negligence of duty. This situation was reflected in the statements of the participants as follows:

Administrator 1: "If the mistakes continue, they will receive a warning. First He/she receives a verbal warning. If he/she continues to make mistakes despite the verbal warning, this time we give the envelope. Yellow envelope, which means you get a written warning."

Teacher 9: "So they warn us. If they warn you several times, different measures can be taken."

Teacher 6: "They warn us. Sometimes, we receive verbal or written warnings. They can give you a written warning when you come to school late. If you do not follow the rules as a result of the evaluation, you will be fired at the end of the year. These are ordinary things in private schools"

Discussion

This study revealed how the performance evaluation of teachers in a private school was carried out. It was seen that the performance evaluation of teachers was made by (i) surveys applied to students, school administrators and parents (ii) observations made by school administrators in general (iii) course inspections and (iv) follow-up with digital cameras. In this section of the study, limitations, interpretations of the findings and conclusion are presented.

Limitations

As it can be seen in some qualitative studies, a limitation of this research was the small sample size. This study was conducted only in one private school so the findings cannot be generalised across all schools in Turkey. Moreover, it is very hard to gain access to data since teacher performance evaluations are not carried out systematically in the context of accountability in Turkey. Therefore, other schools in Turkey awaits confirmation through new research.

One another limitation of this research is associated with time. Specifically, the research was carried out in the 2013-2014 academic year and the purpose of the research was to reveal how the performance evaluations of teachers in a private school were made. However, a legal framework for the performance evaluation of teachers has not been established in Turkey, yet. On the other hand, since the number of studies on the performance evaluation practices of teachers in schools is very low, the data still have a potential to shed light on the present situation.

Interpretation of the Findings

In the study, it was seen that the surveys have an important place in the evaluation of teachers' performance. When the opinions of the participants were examined, it was determined that the surveys were applied once in a period to evaluate the performance of the teachers in the private school where the research was conducted. When the literature was examined, it was seen that with the 2000s in the United States primary, secondary and high school students started evaluating their teachers (Ferguson, 2012). Similarly, in the same years, online surveys were made in universities where students could evaluate the education given to them (Dommeyer et al., 2002). However, it is stated in some studies that only the survey results are not sufficient to evaluate the performance of teachers (Bacher-Hicks et al., 2019; Looney, 2011). For this reason, it it would be appropriate to evaluate teachers in a more holistic way. Within the scope of the research, attention was drawn to the general observations made in the performance evaluation of teachers. The participants stated that their superiors made general observations throughout the school, and that teachers were evaluated based on some criteria. Studies draw attention to the importance of school principals' observations in the evaluation of teachers (Reid, 2019). School principals use general observations to distinguish high or low performing teachers (Jacob & Lefgren, 2008; Orphanos, 2014). Therefore, school principals try to determine the performance level of teachers by observing the quality of teachers' relationships, especially with students and parents, and the processes of dealing with disciplinary problems (Yariv, 2009). Based on these views, it can be said that it is important to make effective observations.

The study also showed that classroom inspections are also used in the performance evaluation of teachers. In the statements of the participants, it was explained that together with the course inspections, the teacher file control was also carried out. In the literature, in-class inspections have an important place in the performance evaluation of teachers along with different methods (Ayeni, 2012; Bacher-Hicks et al., 2019). In-class inspections are seen as a feedback opportunity for the emergence of the instant situation regarding teaching and for the professional development of teachers (Range et al., 2011). New school principals attach more importance to course inspection and feedback (Hvidston et al., 2016). It is for sure that schools in which classroom instruction is supervised are much more effective than non-supervised schools (Iroegbu & Etudor-Eyo, 2016). From this point of view, it is

seen that the performance evaluation of teachers can be better understood with the inspection in the classroom.

In line with the statements of the participants in the study, it is understood that the cameras and audio and video surveillance in all places of the school is another method used in the performance evaluation of the teachers. Recordings made through cameras at the school are archived. Thus, records can be traced retrospectively when necessary. This situation can be handled on the basis of Michel Foucault's criticisms of modern societies, which aim to keep people under control by constantly monitoring and controlling (Mathiesen, 1997). Monitoring schools and classrooms with cameras ensures that teachers are always above certain standards and that the classrooms are always ready for inspection. In addition, the monitoring is used as a tool to provide predictable goals for the future of teaching (Page, 2017). A similar situation indicates the existence of such practices in different countries in the literature. It has been monitored by cameras in schools and classrooms in England since 1998, and is used to intervene in different security problems and evaluate teacher performance (Taylor, 2011). A study conducted in Israel reveals that cameras in schools are used by school principals to monitor whether teachers attend classes on time, use their teaching time effectively or whether their duty is fulfilled and evaluate teachers (Perry-Hazan & Birnhack, 2019). In another study conducted in China, continuous live monitoring of lectures is seen as an alternative to classroom supervision (Dyke et al., 2008). At the same time, it is stated that continuous monitoring with cameras provides a more objective evaluation opportunity (Liang, 2015).

On the other hand, teachers are awarded during the year and at the end of the year according to the performance evaluation results. Participants mentioned some positive results of evaluating their performance at school. Accordingly, as a result of the performance evaluation, it is understood that the teachers who are ahead of the other teachers are awarded. The awards vary according to the performance of the teachers. According to the study results, the main awards are as follows: (i) salary increase (ii) plaques and certificates with symbolic value (iii) contract renewal.

Many studies in the literature point to the positive results that teachers get as a result of performance evaluation. Especially in the American education system, the determination of performance-based teacher salaries has been applied since the end of the 19th century (Springer & Gardner, 2010). The high performance of teachers is supported by cash or different rewards that teachers will like (Frase, 1989). Teachers' performance evaluation provides wage increases, promotion opportunities, and feedback opportunities for institutional decisions (Çelebi et al., 2018). Determining the increase in teachers' salaries depending on the goals set by the schools and the performance in student achievement is seen as an important step that can be taken for the improvement of education systems (Lavy, 2007; Loyalka et al., 2019; Mohrman et al., 1996). The reason for this is that the increase in teachers' salaries is expected to have positive effects on the

teaching quality of teachers (Figlio, 1997). Therefore, private schools are trying to take measures with the awareness that improvements in teachers' salaries will contribute to teacher performance (Podgursky & Springer, 2007). The results of the research also revealed some concrete results of this. For example, in many countries, there is an increase in student achievement, especially in science and mathematics branches, in schools where teacher performance is paid (Woessmann, 2011).

According to the results of the study, it was determined that the teachers were punished for their low performance. The consequences that emerge as punishments are as follows: (i) verbal or written warning penalties, (ii) low raise in salaries (iii) termination of some duties and (iv) contract renewal/dismissal.

In a study conducted in England and Finland, workload, low wages, increased behavioral disorders of students, and decreased respect for the teaching profession emerged as major challenges faced by teachers today, when performance expectations at school increase (Webb et al., 2004). According to the results of the research, it was seen that teachers were warned in some cases. This situation has been expressed in different studies. Teachers are warned by the school administration when they are late for their classes, leave the class early, neglect their duty or use slang expressions at school (Altınkurt & Yılmaz, 2012). Teachers who are found inadequate as a result of the performance evaluation are exposed to some sanctions. This is perceived as punishment by teachers. Many studies reveal that low performers are dismissed as a result of teachers' performance evaluation (Taylor & Tyler, 2012). Today, private schools sometimes do not renew teachers' contracts without even giving a reason, and teachers who lose their jobs have to seek their rights in court (Gümrükçüoğlu, 2016). On the other hand, it is surprising that teachers accept these performance evaluation sytems in their schools and do not bring any criticism (Aypay, 2015). A study conducted in India, Malaysia and Thailand focused on the negative consequences of evaluating teachers' performance in lessons. Accordingly, supervision is used as a punishment and a fault finding tool rather than providing professional development of teachers (Sharma et al., 2011). Despite the intense criticism that video surveillance in schools is a violation of private life, it is thought-provoking that schools have now become an ordinary fixture (Taylor, 2010).

Conclusion

This research has shown that the performance evaluation of teachers is a very challenging process. Considering the inadequacies in performance evaluation and its negative consequences, it seems that it is more appropriate to use diversified methods instead of a single method for qualified evaluation (Guarino et al., 2015). On the other hand, considering the intensity of the administrative and bureaucratic work of school principals (Balıkçı & Aypay, 2018), performance evaluation of teachers is considered as a time-consuming and tiring process in most cases. However, considering that the quality of teaching is directly related to the teaching of teachers, it is an undeniable fact that

qualified teacher evaluation models are needed. Researchers are recommended to conduct qualitative and quantitative research with larger samples in both private and public schools.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Syrian Refugees' Acceptance and Use of Mobile Learning Tools During the Covid-19 Pandemic

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Abstract

Mobile learning, which is widely used in educational settings during the Covid-19 pandemic, will continue playing a critical role in learning environments in the future. Since the successful implementation of mobile learning in education is largely based on users' acceptance of these technologies, it is essential to understand the factors affecting learners' acceptance of mobile devices as learning tools. This study investigated Syrian adult refugees' acceptance and use of mobile learning tools. The results revealed that Syrian adult refugees were positive about using mobile devices in learning Turkish as a second/foreign language, and there exists a concrete and significant correlation among all the constructs of the mobile learning tools acceptance like Perceived Ease of Use, Contribution to Foreign Language Learning, Negative Perceptions, and Voluntariness of Use. Factors affecting mobile learning acceptance was also investigated in the study, and the results indicated significant differences among the refugees regarding their characteristics such as age, gender, level of education. The results also revealed that while the refugees did better in the tests over time, mobile learning acceptance had no significant effect on foreign language achievement. Depending on these results, it can be suggested that mobile devices should be integrated into the education system as a component of the curriculum.

Keywords: Mobile learning tools acceptance, refugees, Covid-19 pandemic, Turkish as a second/foreign language

DOI: 10.29329/epasr.2022.248.9

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Introduction

Because of the demands of the 21st century, radical changes have occurred in learning environments; the classrooms are being flipped, constructivist approach is used in teaching, authentic and personalized learning is preferred by the students, and the role of teachers is largely to facilitate learning rather than to convey information. It is essential for educators to keep up with these changing trends so that education is on the leading edge. In learner-centered environments, where the teacher is not the focus of the learning process, ample opportunities are provided for obtaining, transferring and constructing new information for learning purposes moving it away from the one-size-fits-all approach inherent in traditional learning (Cardullo et al., 2015, p. 12).

One common feature in all classroom settings is the variety of learning levels and needs among students. Therefore, it is crucial to determine the best ways to meet the needs of all learners and differentiate instruction to ensure that all learners are challenged adequately and appropriately in their learning. In this context, the following principals can be listed as the key for effective instruction (Smaldino et al., 2014, pp. 37-38):

- Assessing prior knowledge
- Considering individual differences
- Stating objectives
- Developing metacognitive skills
- Providing social interaction
- Incorporating realistic (real life) contexts
- Engaging students in relevant practice
- Offering frequent, timely, and constructive feedback

Accelerated societal changes are driving students' preferences on how and what they learn, and when they learn as well (Cardullo et al., 2015, p. 11). In the past, students would spend more time at schools, libraries and conference halls. However, it is clearly seen that the components of traditional learning can no longer satisfy the needs of today's generation. With the introduction of technology, learning environments are much different today. Especially after the 2000s, the tendency of people not to stay long in the same location, in other words to be mobile, has completely changed our lifestyle with the effect of developing mobile technologies. Today, we are in the time where mobile devices such as laptops, tablet PCs and smartphones are common learning tools in classrooms, and videoconferencing systems, social networking sites, digital libraries, learning management

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systems are standard learning environments in educational settings. Due to the influence of this paradigm shift, there is a strong need for educators to be aware of learners' attitudes towards learning, their needs and preferences.

In today's information age, digital natives do not learn in isolation that they engage in multitasking and view information in a broad and networked format (Smaldino et al., 2014, p. 32). They are keen on taking advantage, to the utmost, of technologies in their learning process. The most important criterion for them is that they find the learning method to be applied meaningful and worth spending time, and they use technology.

Mobile Learning

A paradigm shift in education is brought about by the ubiquity of mobile devices. Among all age groups the use of mobile devices has rapidly increased, and mobile learning (m-learning) has ranked top in the list of popular approaches in education. The availability of mobile devices to many of us already and our life becoming more and more dependent on them makes the usefulness of these devices as effective learning tools indisputable and with the use of these technologies in education, students with diverse learning styles can be incorporated into educational settings.

There are many definitions of mobile learning in the literature emphasizing that learning takes place or is supported by means of mobile technologies such as tablet PCs, laptops, PDAs and smartphones. There also are definitions focusing purely on the mobility of the devices (Traxler, 2007, p. 4). In the early 2000s, researchers agreed that the basic premise of mobile learning involved e-learning that use mobile devices and wireless transmission. A few years later, m-learning was asserted to be basically a more transportable version of e-learning (Stevens & Kitchenham, 2011, p. 2). However, mobile learning is not simple but a complex process which involves the mobility of the technology, the mobility of the learner and the mobility of the information (Pachler et al., 2010, p. 6).

The primary focus of mobile learning is not merely related to the acquisition of knowledge through mobile devices, but we have to consider it as a means to support meaning-making part of the learning process and help learners shape their knowledge. From this aspect, mobile learning is not simply using technology and delivering content with mobile devices. Instead, it is about learning and operating in new and ever-changing contexts and also being able to utilize our everyday life-worlds as learning spaces (Pachler et al., 2010, p. 6). In order for the individuals to achieve learning outcomes, it needs to be ensured that technology is an integral part of the curriculum with clear goals and alignment across content; and teachers must be metacognitive in their instruction where they coordinate their technological, pedagogical, content knowledge to engage students and foster ubiquitous learning (Cardullo et al., 2015, p. 10).

While many view mobile devices as a factor driving disruption in the classroom, an abundance of evidence from research suggests the idiosyncratic features of these devices have clearly consolidated its role in education. Mobile devices have become an essential component of the learning process as they gain popularity among all age groups. They have the potential to extend interaction beyond classroom, enhance individualized and self-directed learning, and encourage the active participation of learners in the learning process.

Donohue and Crosby (2013, p. 211) highlights the unique powers of mobile learning as the instant access to the world, encouraging student enjoyment and developing personal responsibility for learning, and integrating Web 3.0 technology to learning where the device performs decision-making about the content to push to the learner. It is another remarkable feature of m-learning that learners can combine the school content with real-life experiences. They move seamlessly across different settings and connect up learning in different locations. Taking this advantage of mobile technologies, learners are able to engage in situated learning and make use of context-specific resources (Kumar Mishra, 2015, p. 226). From this perspective, the mobile component lets learners inquire and process their learning as needed, and therefore facilitates natural learning in real time (Donohue & Crosby, 2013, p. 211).

Noticeably, the field of language learning has been attracted by the popularity of mobile devices. By means of these tools, a variety of cultural resources, content and functionalities are available to users, which is significant in language learning. The communicative potential of mobile devices is also important in learning languages as it enables users to interact with themselves, with others and with their environment (Pachler, 2010, p. 5). Concerning the benefits of using mobile in language learning, Djoub (2015, p. 194) claims that the use of mobile devices promises learners' engagement with learning and they facilitate learners' collaboration and participation via social networks. However, merely including mobile devices and various applications in education doesn't guarantee maximizing language learning. The way these devices are integrated in the course and the objective of their use remain crucial issues for educators to consider (Djoub, 2015, p. 195). The teachers should be active users of these technologies and be aware of the strengths and limitations of them as well. To this end, there is a constantly emerging need to investigate how to integrate mobile technologies into language learning and how learners react to it.

Widespread ownership of mobile devices among students and teachers and the growing functionalities of these devices create unique opportunities for using them to support teaching and learning during the Covid-19 pandemic.

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Covid-19 Pandemic and the Educational Practices

Maps have so far been the sources that people have tried to understand the world from the political, physical and economic aspects, and we have followed the developments throughout history through such maps. However, since the Covid-19 outbreak, which has seriously affected human life all over the world for more than two years, we have woken up to the new day with a map updated every day, and this is unfortunately the outbreak world map. This map of the World Health Organization highlights the countries affected by the coronavirus, the number of confirmed cases and unfortunately the deaths.[1]

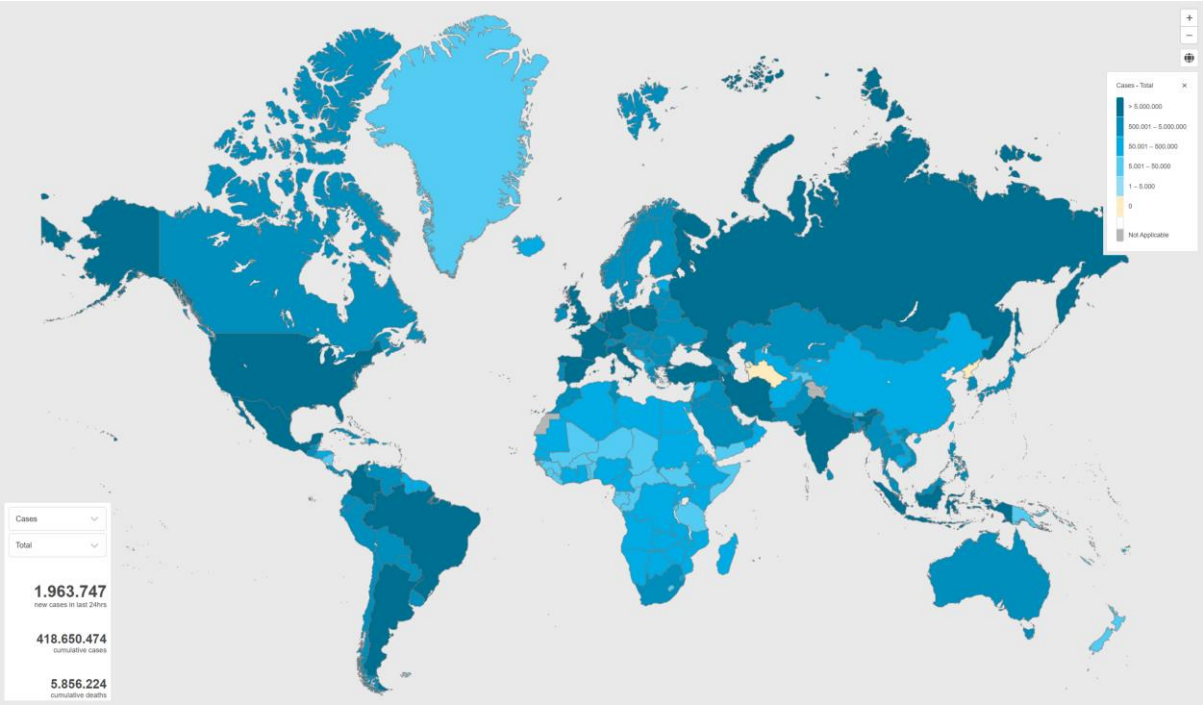

Figure 1: WHO Covid-19 dashboard

Assessing the situation on our side, a similar map of this is also found in the field of education. The following map shows the school closures caused by Covid-19, and the number of the affected learners around the world.[2]

[1] Retrieved on February 18, 2022 from https://covid19.who.int/
[2] Retrieved on February 18, 2022 from https://en.unesco.org/covid19/educationresponse

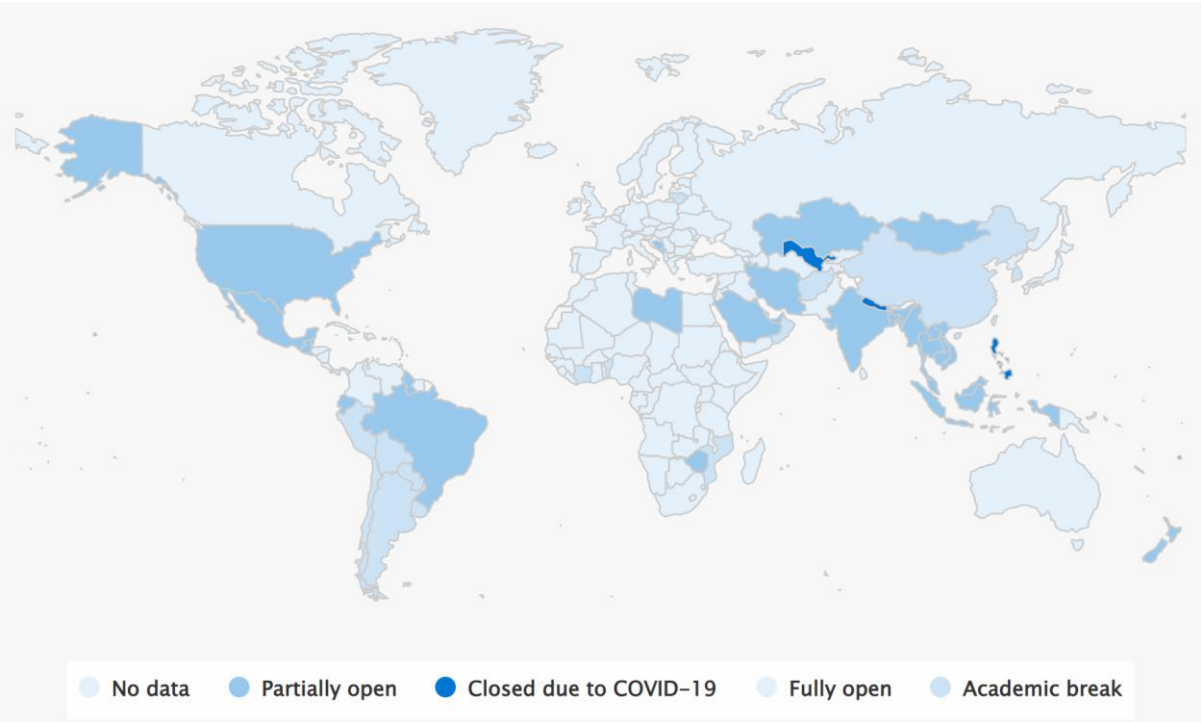

Figure 2: Covid-19 Impact on education

Since the World Health Organization declared the coronavirus outbreak a pandemic on March 11, 2020 (WHO, 2020), official records have shown that the education systems of 191 countries have been affected by the situation. Most governments around the world have temporarily closed schools nationwide and face-to-face education was suspended in an attempt to prevent the spread of the pandemic.

Throughout the period, many countries have taken preventive measures to get through the crisis with minimal damage and have continued their instructional activities through distance education. As of today, it is stated that schools in 6 countries are still closed and 43,518,726 students are negatively affected by the coronavirus outbreak (UNESCO, 2022). Under the measures taken; primary schools, secondary schools, high schools, and universities in Turkey have been implementing distance education since March 20, 2020.

The Case for Syrian Refugees

The European Union (EU) and United Nations Development Programme (UNDP) collaborate in contributing to the economic and social resilience of Syrians displaced due to the Syrian crisis and now living in Turkey. To this end, several resilience projects have been initiated since the refugee influx to Turkey. “The Support for School Enrolment (SSE) programme” is a partnership between

UNICEF, the Ministry of National Education (MoNE) and ASAM, and enables out-of-school refugee children in Turkey to access formal and non-formal education opportunities.[1]

"Qudra 2 - Resilience for refugees, IDPs, returnees and host communities in response to the protracted Syrian and Iraqi crises" supports children and youth who cannot easily access education to develop their potential, which will contribute to a secure, stable and prosperous future for the region.[2] However, the Covid-19 pandemic severely disrupted the education and some trainings have shifted online.

"Turkey Resilience Project in Response to the Syria Crisis (TRP) - Turkish Language Training for Adults (TLTA)" began on February 1, 2018. The project, which is one of the best practices in terms of the teaching method used and the number of people participated in the trainings,[3] is implemented by UNDP in collaboration with the General Directorate of Lifelong Learning of the Turkish Ministry of National Education (MoNE - GDLL).[4] The Turkish language trainings are organized in accordance with the four basic language skills of the Common European Framework of References for Languages (CEFR) in a way that Syrian refugees will acquire the necessary language skills to support their integration into the community. For this purpose, tailor made educational content is developed, published and distributed.[5] As for the method, all the courses in the project are taught by using blended learning model, which is a combination of face-to-face learning in-class and online learning methods.[6] With the Covid-19 outbreak, Turkish language trainings for refugees in PECs was suspended by the decision of the Ministry of National Education and online distance education was initiated as in other schools throughout the country as a remedial training for unperformed in-class lessons. This time, Syrian refugees had to continue their education online with the same course content via videoconferencing tools and learning management systems (Türker, 2020, p. 328).

Aim of the Study

Language trainings for adult Syrians under temporary protection in Turkey aim to contribute to their integration into the community. With the coronavirus outbreak, however, distance education is initiated as a method for remedial trainings and the trainees have participated in the synchronous courses using mobile devices such as laptop computers, tablets and smartphones.

[1] Retrieved on December 1, 2021 from https://www.unicef.org/turkey/en/support-school-enrolment-sse-programme
[2] Retrieved on December 1, 2021 from https://qudra-programme.org/wp-content/uploads/2021/09/qudraii_factsheet_general_website.pdf
[3] Retrieved on March 1, 2021 from https://epale.ec.europa.eu/en/blog/undp-turkey-resilience-project-response-syria-crisis-trp-adult-language-training-blended-2
[4] Retrieved on March 1, 2021 from http://www.ytde.info/en/343-2/
[5] Retrieved on March 1, 2021 from https://www.avrupa.info.tr/en/project/undp-turkey-resilience-project-response-syria-crisis-trp-7512
[6] Retrieved on March 1, 2021 from https://www.tr.undp.org/content/turkey/en/home/presscenter/pressreleases/2017/03/turkey-resilience-project-in-response-to-the-syria-crisis--trp--.html

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There is no doubt that mobile technology plays a major role in distance learning through the Covid-19 pandemic as it makes learning more widely available and accessible than other e-learning tools. This can be proven by the figures. By March 2021, the number of smartphone users in the world is 3.8 billion, which corresponds to 48.41% of the world's population.[1] In total, the number of people who own a mobile phone (smart phone + feature phone) is over 4.8 billion which is 62.17% of the world's population.[2] In this case, the need arises for investigating the strategies, applications, and resources necessary to support mobile learning. The current study aims to find out Syrian refugees' acceptance of mobile learning tools and their Turkish language achievement during the Covid-19 pandemic.

Significance of the Study

In recent years, many refugees from Syria, Iraq, Afghanistan and other nationalities have migrated to Turkey for reasons such as wars, internal conflicts, economic problems, and poor living conditions in their countries. Official figures report the current number of refugees in Turkey as 4 million. This data is positioning Turkey as the country which hosts the largest number of refugees among all the countries in the world.

The language-based problems are the biggest barrier for refugees to living in harmony with the host communities and earning their lives. The same is true for Syrians residing in Turkey that Turkish language training is of utmost importance to them. Hoping a better life in their new country, they learn Turkish as a second language to empower themselves and participate in social life.

Considering that distance education, which has gained importance worldwide with the Covid-19 outbreak, will continue to be implemented from now onward, studies in this field will shed light on the planning of educational activities. As a component of distance learning, it is essential to make the most of mobile learning in teaching foreign languages as in all areas of education.

The results of this study, which examines Syrian adult refugees' acceptance and experiences of mobile learning will contribute to the field by helping teachers and instructional designers increase the effectiveness of mobile language learning environments, determine the problems experienced, and seek permanent solutions to these problems.

Literature Review

Mobile devices have long been claimed to be beneficial learning aids both for native speakers in L1 contexts as well as in foreign/second language learning contexts. Therefore, several research has

[1] Retrieved on March 8, 2021 from https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/

[2] Retrieved on March 8, 2021 from https://www.statista.com/statistics/274774/forecast-of-mobile-phone-users-worldwide/

been conducted to examine learners' acceptance of mobile learning, which has been a global learning trend especially during the Covid-19 pandemic.

Donaldson (2011) conducted a research to test the determinants of the behavioral intention to use mobile learning and to discover age or gender differences in the acceptance of mobile learning by the community college students. The results indicated that performance expectancy, social influence, perceived playfulness of learning, and voluntariness of use are all significant determinants of behavioral intention to use mobile learning; however, age and gender have no relationship on intended use of mobile learning.

In his study, Nikolopoulou (2018) investigated secondary school students' perceptions regarding mobile device usage and mobile learning acceptance in terms of specific characteristics. The study found significant differences in students' perceptions of mobile learning acceptance in favor of older secondary students, and those frequently go online and have more experience using a mobile device. Gender had no effect on any factor.

Alasmari and Zhang (2019) studied with a total of 1203 college students to examine mobile learning technology acceptance in Saudi Arabian higher education. They found that learning expectancy, effort expectancy, social influence, and characteristics of mobile learning are significant predictors of students' intentions to use mobile learning technologies. Among the characteristics -gender, age, and eLearning experience- of the participants, social influence was found as moderated by gender, where men showed a stronger behavioral intention to use mobile learning technology than women.

An empirical analysis on factors impacting mobile learning acceptance in higher engineering education was carried out by Huang (2014). The results showed that performance expectancy, perceived enjoyment, ubiquity, service quality, attainment value, and self-management of learning are significant predictors of behavioral intention to use mobile learning while facilitating conditions, social influence, effort-expectancy, and self-efficacy were found to be insignificant. In terms of gender, the results signaled a significant difference between females and males' intention to use mobile learning suggesting that females scored higher than the males on the intention to use mobile learning. However, no significant differences were found on students' intention to use mobile learning regarding their age, college level, and years of using mobile devices.

Aiming to determine the factors that significantly influence the acceptance and intent to use mobile devices for learning in university contexts, Aliaño et al. (2019) designed a data collection tool and collected data from 370 university students in Spain. Through the data collected, it was concluded that university students had a high pre-disposition for the use of mobile devices for learning, with a direct relationship with the constructs validated, as well as the demographic variables -age, gender,

degree year and field of knowledge- that could be considered moderating variables of the pre-disposition observed.

Wang et al. (2009) conducted a study with the participation of 330 respondents from five organizations in Taiwan to investigate the determinants of m-learning acceptance and to discover age or gender differences in the acceptance of m-learning. The results revealed that performance expectancy, effort expectancy, social influence, perceived playfulness, and self-management of learning are all significant determinants of behavioral intention to use m-learning. It was also among the results that age differences moderate the effects of effort expectancy and social influence, and that gender differences moderate the effects of social influence and self-management of learning on m-learning use intention.

In an investigation of the factors that influence faculty members' and students' acceptance of mobile learning in online higher education, Marrs (2013) found significant differences among faculty members and students regarding their age, mobile device experience levels, and desired academic uses of mobile devices. The results indicated that younger participants are significantly more positive than older participants and those with more experience and greater abilities to use mobile devices for communicating are more positive than those having less experience. Yet, it was revealed that gender have no significant effects on perceptions of m-learning among faculty members and students.

In the literature, there exists studies carried out with teachers or pre-service teachers. One of these studies was conducted by Pullen et al. (2015). In their study, they used the UTAUT model as a theoretical framework to investigate the factors that influenced Malaysian pre-service teachers' acceptance and use of mobile learning. The results of the study illustrated that performance expectancy, effort expectancy, social influence, attitude toward technology and self efficiently are all significant determinants of behavioral intentions to use mobile devices for learning. However, no significant differences were found in the acceptance of mobile learning based on demographic variables such as age and gender.

In a similar study, Papadakis (2018) examined pre-service teachers' perceptions of the use of mobile devices in the classroom, and age and gender differences on the acceptance of mobile learning. The results indicated that pre-service teachers have positive opinions on the use of mobile devices as learning tools; however, there were no gender and age differences regarding mobile devices acceptance.

Another study was carried out by Al-Hunaiyyan et al. (2017) to examine instructor perceptions of m-learning and social media learning tools, as well as to investigate gender and age differences in the acceptance of m-learning. The study revealed that instructors from different higher

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education institutions had moderately positive opinions about m-learning and the findings confirmed significant gender and age differences in instructors' acceptance of m-learning.

Method

Research Design

This study emphasizes the mobile learning experiences of Syrian refugees' residing in Turkey and learning Turkish as a second language during the Covid-19 pandemic. In this context, a cross-sectional survey approach was employed in this quantitative research to examine the associations between refugees' acceptance of mobile learning tools and their Turkish language achievement. Cross-sectional surveys involve observations of a specific population at a single point in time (Babbie, 2017, p. 107; Creswell, 2005, p. 355), which can be very useful for providing one-off information about the attributes of that population (Wyse et al., 2017, p. 399).

The research questions addressed in the study are as follows:

1. What is the level of mobile learning tools acceptance of Syrian refugees?
2. What are the relationships among the constructs of the mobile learning tools acceptance?
3. Is there a significant difference in refugees' acceptance of mobile learning tools with regard to specific characteristics (age, gender, level of education)?
4. What is the level of Turkish language achievement of Syrian refugees?
5. What is the effect of Syrian refugees' acceptance of mobile learning tools on their language achievement?

Population and Sample

With the internal conflicts in their countries turning into a civil war, Syrian refugees who are forced to migrate to Turkey are in need of learning Turkish for different reasons in the process of building a sustainable future in their new countries. Syrian adults residing in Turkey are taught in PECs of their provinces. The population of the research is Syrian adult refugees who learn Turkish as a second language. A cluster sampling technique was employed to select the sample. Cluster sampling, a probability sampling technique, is used where it is very difficult, if not possible, to list all the members of a target population and select the sample from among them. In this sampling technique, researchers divide the population into clusters and a simple random sample among the groups is then selected (Ary et al., 2014, p. 167; Gliner et al., 2017, p. 146; Laher & Botha, 2012, p. 91). In this context, Syrian adult refugees who are taught Turkish online at B2 level in the PECs constitute the sample of the study. Demographic information regarding sampling is shown in Table 1.

Table 1. Demographic information of the participants

Variable	Features	n	%
Gender	Male	33	25
	Female	99	75
Age	18-22	22	16.7
	23-28	23	17.4
	29-35	39	29.5
	36-42	20	15.2
	43-49	21	15.9
	50 and +	7	5.3
Level of education	Primary school	6	4.5
	Secondary school	14	10.6
	High school	54	40.9
	College	58	43.9
Mobile device used	Smart phone	115	87.1
	Tablet	6	4.5
	Laptop	11	8.3
Total		132	100

Syrian refugees participated in the study ranged in age from 18 to 58. The female/male ratio was close to 4:1. Around 4.5% of the refugees graduated from primary school, 10.6% graduated from secondary school, 40.9% are high school graduates, and %43.9 have got college degree. Over 87% of the refugees reported they used their smart phones in the distance learning process during the pandemic. This reveals that the smart phone is the primary device which is used daily by almost all refugees. Among the rest, 11 refugees used a laptop computer, and 6 used their tablet PCs.

Data Collection Tools

The data of this quantitative research were obtained from two instruments: a mobile learning acceptance survey and language achievement tests. The mobile learning acceptance survey consists of five demographic questions and the "Mobile Learning Tools Acceptance Scale (MLTAS)" developed by Özer and Kılıç (2017) for foreign language learning. The scale which was validated in four dimensions: perceived ease of use (PEoU), contribution to foreign language learning (CtFLL), negative perception (NP) and voluntariness of use (VoU) yielded high internal consistency reliabilities (Cronbach's Alpha=0.83) and construct validity coefficients. The findings showed that the scale had strong validity and was proven to be reliable when assessing foreign language learners' acceptance of mobile learning tools.

In order to assess Syrian refugees' Turkish language skills, two achievement tests were developed and implemented by the researcher. Both tests were prepared based on language structures

and the content taught in line with the curriculum at B2 level. The first test, which included 24 multiple choice questions, was administered three weeks after mobile learning was initiated. The second achievement test including 40 multiple choice questions was implemented three weeks following the first test. Prior to the study, the tests were piloted with 23 adult learners of Turkish for the validity, reliability, and item analyses of the tests. The results of the analyses showed that the tests have strong validity and are proven to be highly reliable (KR-20= 0.80). In addition, all items were confirmed to have a strong item discrimination power and can be used in the tests ($r > 0.30$).

Data Analysis

With regard to the first research question, the aim of which was to explore Syrian refugees' acceptance of mobile learning tools, the data obtained from the MLTAS were analyzed using SPSS 22.0 (Statistical Package for the Social Sciences). First, a normality test was conducted to see whether the data were normally distributed. Since the data were found to be normally distributed, parametric statistical procedures were used to calculate the frequencies, percentages, mean values and standard deviations of the scores obtained from the MLTAS. Next, the correlation coefficients of the scores obtained from the MLTAS were calculated. To analyze the second research question, the correlation coefficients among factors and characteristics of the participants (age, gender, level of education) were calculated. In order to address the second research question, a similar procedure was followed for the data obtained from each achievement test. First, the raw scores from the tests were converted into percentages and then the mean values and the standard deviations from the achievement tests were calculated using SPSS. A paired-samples t-test was later performed to see the progress of the refuges in the process. In response to the fourth research question, the correlation coefficients of the scores obtained from the MLTAS and the language achievement tests were calculated using "Pearson Correlation Analysis". The results were interpreted with a significance level of 0.05.

Results

The data of this quantitative research that aimed to find out Syrian refugees' acceptance levels of mobile learning tools and its effect on language achievement were analyzed using SPSS version 22.0 and interpreted in the context of each research question.

1. Syrian Refugees' Acceptance of Mobile Devices as Learning Tools

Data gathered from the MLTAS were analyzed quantitatively in reference to the first research question, in order to find out Syrian refugees' acceptance levels of mobile learning. Prior to the statistical analyses, a test of normality was conducted in order to see whether the data were normally distributed. The results of the test of normality are illustrated in Table 2.

Table 2. Test of normality results for MLTAS

Sub-dimension	SD	Skewness	SE	Kurtosis	SE
PEoU	0.900	-0.764	0.211	-0.548	0.419
CtFLL	0.887	-0.342	0.211	-0.932	0.419
NP	0.925	0.107	0.211	-0.540	0.419
VoU	0.889	-0.498	0.211	-0.521	0.419
MLTAS (Total)	0.704	0.232	0.211	-0.621	0.419

The empirical measures reflecting the shape of the distribution (skewness and kurtosis) can be used in order to assess normality of the metric variables (Hair et al., 2014, p. 77). Skewness is an index that helps determine how much a variable's distribution deviates from the distribution of the normal curve. In other words, it refers to the lack of symmetry in a frequency distribution (Leech et al., 2008, p. 21). Skewness values falling outside the range of -1 to +1 indicate a substantially skewed distribution (Hair et al., 2014, p. 34). Kurtosis is a measure of the "peakedness" or the "flatness" of a distribution. A kurtosis value between ±1.0 is considered excellent for most psychometric purposes (George & Mallery, 2020, p. 114). Since MLTAS with all the sub-dimensions has skewness and kurtosis values between ± 1.0, the data were accepted to be normally distributed and parametric statistical procedures were applied to analyze MLTAS. Primarily, means and standard deviations were calculated on the data obtained from the scale (See Table 3).

Table 3. Descriptive statistics for MLTAS

Sub-dimension	n	$\overline{X}$	SD	SEM
PEoU	132	4.15	0.900	0.078
CtFLL	132	3.90	0.887	0.077
NP	132	2.49	0.925	0.080
VoU	132	3.88	0.889	0.077
MLTAS (Total)	132	3.71	0.704	0.061

Evaluating the data in the context of the sub-dimensions of the scale, it is seen that the highest average score is obtained from the "PEoU" sub-dimension ($\overline{X}$ = 4.15). This reflects that mobile devices are viewed as a useful component of distance learning model by Syrian adult refugees, and they find mobile devices easy to navigate when working on learning tasks. The "CtFLL" has the second highest average score that mobile devices are considered powerful educational tools in learning Turkish as a second language ($\overline{X}$= 3.90). It can be inferred from Table 3 that while improving achievement, mobile devices contribute to the development of language and communication skills. A very similar average score in MLTAS was obtained from the "VoU" sub-dimension ($\overline{X}$ = 3.88).

Voluntariness plays a major role in the learning process as it is a key determinant of whether or not to adopt a learning technology and engage in activities. The results revealed that the Syrian refugees are inclined and eager to take advantage of mobile devices. Negative perceptions of mobile devices as learning tools by the refugees has the lowest average score ($\overline{X}$= 2.49) confirming the results in other sub factors. From these results, it can be concluded that mobile devices are accepted as useful learning tools in learning Turkish as a second language by Syrian adult refugees.

2. The Relationships Among the Constructs of the Mobile Learning Tools Acceptance

Regarding the second research question, the correlation coefficients of the scores obtained from the MLTAS were calculated using "Pearson Correlation Analysis". The results were interpreted with a significance level of 0.05 (See Table 4).

Table 4. Correlation coefficients of the MLTAS

Sub-dimension		PEoU	CtFLL	NP	VoU
PEoU	Pearson Correlation	1	0.656**	-0.377**	0.664**
	Sig. (2-tailed)		0.000	0.000	0.000
	n	132	132	132	132
CtFLL	Pearson Correlation	0.656**	1	-0.282**	0.768**
	Sig. (2-tailed)	0.000		0.001	0.000
	n	132	132	132	132
NP	Pearson Correlation	-0.377**	-0.282**	1	-0.256**
	Sig. (2-tailed)	0.000	0.001		0.003
	n	132	132	132	132
VoU	Pearson Correlation	0.664**	0.768**	--0.256**	1
	Sig. (2-tailed)	0.000	0.000	0.003	
	n	132	132	132	132

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Correlation coefficients can range from -1.00 to +1.00 where -1.00 represents a perfect negative correlation +1.00 represents a perfect positive relationship (Bryman & Cramer, 2005, p. 219; Field, 2013, p. 267; George & Mallery, 2020, pp. 139-140). The correlation is strong when $r = \pm 0.6$ or takes higher positive or negative values, the correlation is moderate when r is between ± 0.3 and ± 0.6, the correlation is weak when $r = \pm 0.1$ or takes lower positive or negative values, the correlation is null when $r = 0$ (Levin et al., 2017, p. 187).

From the correlation analysis, it is seen that all the factors of the MLTAS are significantly correlated with each other. There is a moderate positive correlation between PEoU and CtFLL (r =

0.66, $p < 0.001$) suggesting that that the learners' ability to use mobile devices as learning tools is a significant factor to contribute to foreign language learning, and vice versa. PEoU is negatively correlated with NP in moderate level ($r = -0.38$, $p < 0.001$) that the more skilled the refugees are at using mobile technologies, the less negative perceptions they have towards the use of mobile learning tools. PEoU is also seen to have a moderate positive correlation with VoU ($r = 0.66$, $p < 0.001$), the refugees' willingness to try mobile devices while learning Turkish as a second language. Similarly, CtFLL is negatively correlated with NP ($r = -0.28$, $p < 0.001$), and positively correlated with VoU ($r = 0.77$, $p < 0.001$). Another negative correlation exists between NP and VoU ($r = -0.26$, $p < 0.001$), which indicates that there is a tendency for refugees having fewer negative perceptions towards the use of mobile learning tools to be more willing to use mobile devices as learning tools while learning Turkish.

3. The Effect of Syrian Refugees' Characteristics on Their Acceptance of Mobile Learning Tools

Given significant correlation exists among all the factors of MLTAS, relations between each factor and refugees' characteristics were then explored. For this purpose, Independent Samples T-Test was used to examine whether the participants' acceptance of mobile learning tools differed significantly regarding gender. On the other hand, One-way ANOVA test was used to examine the MLTA level differences in terms of age and level of education. The following sections present the results of Independent Samples T-Test and One-way ANOVA test.

MLTA and Gender

When comparing genders, since Levene's Test of homogeneity of variances was achieved (p>0.05) equal variances assumed option was used for the analysis (Field, 2013, p. 374; Pallant, 2016, p. 246). Table 5 below presents the results of the Independent-Samples t-Tests.

Table 5. MLTA levels and gender

Sub-dimension	Group	n	$\overline{X}$	SD	*t*	df	*p*
PEoU	Male	33	4.39	0.817	1.800	130	0.074
	Female	99	4.07	0.917			
CtFLL	Male	33	4.13	0.792	1.734	130	0.085
	Female	99	3,82	0.908			
NP	Male	33	2,10	0.810	-2.867	130	0.005**
	Female	99	2,62	0.929			
VoU	Male	33	4.13	0.832	1.917	130	0.057
	Female	99	3,79	0.896			

**The mean difference is significant at the 0.01 level.

In terms of gender, the results of Independent-Samples T-Test revealed a significant difference only in NP (t = -2.867; df = 130; $p<0.01$), as seen on Table 5, and no significant differences were observed for PEoU, CtFLL and VoU ($p>0.05$). These results illustrate higher NP levels for female participants compared to male participants, which implies that male participants are less negative towards the use of mobile learning tools. For the other sub dimensions, however, the results reveal similar scores for male and female participants, suggesting that gender is not a determinant for PEoU, CtFLL and VoU.

MLTA and Age

In terms of age, Brown-Forsythe statistic was used for PEoU and CtFLL since Levene's Test of homogeneity of variances was not achieved ($p< 0.05$) whereas ANOVA statistic was utilized for NP and VoU as homogeneity of variances was achieved ($p>0.05$) (Field, 2013, p. 443; Pallant, 2016, p. 259). Table 6 presents the results of One-way ANOVA test.

Table 6. MLTA levels and age

Sub-dimension	Group	n	$\overline{X}$	SD	F	*p*
PEoU	18-22	22	4.02	0.735	4.54	0.001**
	23-28	23	3.59	1.004		
	29-35	39	4.26	0.868		
	36-42	20	4.58	0.580		
	43-49	21	4.05	1.057		
	50 and +	7	4.75	0.381		
CtFLL	18-22	22	3,63	0.872	3.01	0.014*
	23-28	23	3,46	0.973		
	29-35	39	4,01	0.938		
	36-42	20	4,21	0.706		
	43-49	21	4,04	0.836		
	50 and +	7	4,14	0.190		
NP	18-22	22	2,40	0.884	0.42	0.833
	23-28	23	2,66	1.055		
	29-35	39	2,53	0.973		
	36-42	20	2,28	1.012		
	43-49	21	2,50	0.722		
	50 and +	7	2,40	0.757		
VoU	18-22	22	3,46	1.009	4.55	0.001**
	23-28	23	3,40	0.796		
	29-35	39	4,10	0.773		

	36-42	20	4,09	0.883
	43-49	21	3,95	0.838
	50 and +	7	4,62	0.390

*The mean difference is significant at the 0.05 level.
**The mean difference is significant at the 0.01 level.

The results of the ANOVA test, as shown in Table 6, reveal significant differences in PEoU (F=4.54; $p< 0.01$), CtFLL (F=3.01; $p< 0.05$) and VoU (F=4.55; $p< 0.01$). However, NP didn't differ significantly in terms of age ($p> 0.05$). In order to examine in which age groups significant differentiation occurs Tamhane's T2 (for PEoU, CtFLL) and Tukey (for VoU) post hoc tests were conducted. Post-hoc Tamhane test results revealed a significant difference between 18-22 year olds and 50 year olds and over (md = -0.72; $p< 0.05$), between 23-28 year olds and 36-42 year olds (md = -0.99; $p< 0.01$) and between 23-28 year olds and 50 year olds and over (md = -1.15; $p< 0.01$). The participants at the age of 50 and over demonstrated higher PEoU than all other younger age groups. For CtLL, the results revealed a significant difference between 18-22 year olds and 36-42 year olds (md = -0.57; $p< 0.05$), between 23-28 year olds and 29-35 year olds (md=-0.55; $p< 0.05$), between 23-28 year olds and 36-42 year olds (md= -0.75; $p< 0.01$), between 23-28 year olds and 43-49 year olds (md=-0.59; $p< 0.05$) suggesting that 36-42 year olds had higher CtFLL levels compared to other age groups. Regarding VoU, Tukey post hoc test results indicated significant differences between 18-22 year olds and 50 year olds and over (md = -1.16; $p< 0.05$), between 23-28 year olds and 29-35 year olds (md=-0.70; $p< 0.05$), between 23-28 year olds and 50 year olds and over (md = -1.22; $p< 0.05$). The refugees at the age of 50 and over demonstrated the highest VoU levels among all age groups.

MLTA and Level of Education

As for the level of education, Levene's Test of homogeneity of variances was achieved for all sub dimensions ($p>0.05$), so ANOVA statistic was utilized (Field, 2013, p. 443; Pallant, 2016, p. 259). The results can be seen in Table 7 below.

Table 7. MLTA levels and level of education

Sub-dimension	Group	n	$\overline{X}$	SD	F	*p*
PEoU	Primary school	6	3.75	1.095	3.99	0.009**
	Secondary school	14	4.07	0.948		
	High school	54	3.90	0.910		
	College	55	4.44	0.791		
CtFLL	Primary school	6	3,50	1.212	1.50	0.219
	Secondary school	14	3,93	0.704		
	High school	54	3.76	0.901		
	College	55	4,06	0.868		

NP	Primary school	6	2,27	0.807	2.17	0.095
	Secondary school	14	2,96	0.922		
	High school	54	2,57	0.953		
	College	55	2,32	0.882		
VoU	Primary school	6	3,20	1.252	3.56	0.016*
	Secondary school	14	3,67	1.031		
	High school	54	3.74	0.792		
	College	55	4,13	0.847		

*The mean difference is significant at the 0.05 level.
**The mean difference is significant at the 0.01 level.

As shown in Table 7, MLTA levels of the participants differ significantly depending on the level of education in PEoU (F=3.99; $p< 0.01$) and VoU (F=3.56; $p< 0.05$). However, no significant differences were observed in CtFLL and NP ($p> 0.05$). Tukey post hoc tests were conducted to investigate which levels of education caused significant differences in these sub dimensions. The results suggest a significant difference for PEoU levels between high school and college graduates (md = -0.53; $p< 0.01$) in favor of the participants who hold a college degree. For VoU, the results showed significant differences between primary school and college graduates (md = -0.93; $p< 0.05$), between high school and college graduates (md = -0.39; $p< 0.05$). The participants holding a college degree demonstrated the highest VoU levels among all groups.

4. Syrian Refugees' Turkish Language Achievement

In order to investigate to what extent the refugees placed at B2 level achieved the learning outcomes specified in CEFR, two achievement tests were administered online at three-week intervals. After the tests were administered and assessed, the raw scores were converted into percentages and the data were coded into SPSS. First, a test of normality was conducted in order to see whether the data were normally distributed. Table 8 presents the results of the test of normality.

Table 8. Test of normality results for achievement tests

Tests	SD	Skewness	SE	Kurtosis	SE
Achievement test 1 (24 items)	16.840	-0.730	0.211	0.357	0.419
Achievement test 2 (40 items)	11.989	-0.961	0.211	0.576	0.419

As seen in Table 8, both achievement tests have skewness and kurtosis within the limits of $\pm$ 1.0. For the normally distributed data, parametric statistical procedures were applied to analyze the achievement tests. Means and standard deviations of the data obtained from the tests are displayed Table 9.

Table 9. Descriptive statistics for achievement tests

Tests	n	$\overline{X}$	SD	SEM
Achievement test 1 (24 items)	132	73.70	16.840	1.466
Achievement test 2 (40 items)	132	79.83	11.989	1.043

According to the results shown in Table 9, the refugees got higher scores in the second achievement test that they took three weeks after the first test. In order to find out whether this 10-point difference between the tests was statistically significant, a paired-samples t-test was performed on the mean scores. The results were interpreted with a significance level of 0.05 (See Table 10).

Table 10. Paired-samples t-test results for achievement tests

Tests	n	$\overline{X}$	SD	*t*	df	*p*
Achievement test 1 (24 items)	132	73.70	16.840	-8.063	131	0.000**
Achievement test 2 (40 items)	132	79.83	11.989			

**The mean difference is significant at the 0.01 level.

Table 10 shows that the difference between the achievement tests is statistically significant (*t*: -8,063; $p < 0.001$). The results can be interpreted as the language achievement levels of the refugees improved over time, as they continued to use them as learning tools in their learning process.

5. Effect of Syrian refugees' acceptance of mobile learning tools on language achievement

With respect to the fifth research question, the correlation coefficients of the scores obtained from the MLTAS and the achievement tests (mean score, $\overline{X}$= 76.77) were calculated using "Pearson Correlation Analysis". The results were interpreted with a significance level of 0.05 (See Table 11).

Table 11. Correlation coefficients of the MLTAS and the achievement tests

		PEoU	**CtFLL**	**NP**	**VoU**
Achievement ($\overline{X}$= 76.77)	Pearson Correlation	0.122	0.106	0.039	0.119
	Sig. (2-tailed)	0.163	0.224	0.661	0.175
	n	132	132	132	132

As illustrated in Table 11, level of achievement and MLTA of the participants had no significant correlations in PEoU (r = 0.12, $p > 0.05$), CtFLL (r = 0.11, $p > 0.05$), NP (r = -0.04, $p > 0.05$) and VoU (r = 0.12, $p > 0.05$), which implies that the refugees' acceptance of mobile learning tools as learning devices is not a significant factor to contribute to language learning.

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Discussion, Conclusion and Recommendations

Traditional learning methods are falling short to meet the everchanging expectations, and this remains as a problem to be solved. Keeping this in mind and considering the demands of the 21st century, it is essential to integrate technologies in teaching and learning environments (Eryaman, 2007).

With the advent of mobile communication technologies, mobile devices have become new learning tools that paved the way for a new learning model, m-learning. Widely used in many educational institutions around the world especially after 2000s, mobile learning has been one of the most popular learning approaches used during the Covid-19 pandemic. Kumar Mishra (2015, p. 236) defines mobile learning as the use of mobile or wireless devices for the purpose of learning while on the move. The major goal of using mobile technologies in education is to set an environment where students find opportunities to actively participate in the learning process.

The purpose of this study, which was carried out with the participation of 132 adult refugees residing in Turkey, was to examine Syrian refugees' acceptance of mobile learning tools, to investigate the effect of refugees' characteristics on their acceptance of mobile learning tools, and to find out the relationship between refugees' acceptance of mobile learning tools and their Turkish language achievement. The results were found to be similar to the results of previous studies.

With regard to the first research question, Syrian refugees' acceptance of mobile learning tools was examined. The refugees expressed positive perceptions indicating mobile learning tools acceptance; in particular, more than half of the sampled refugees agreed and strongly agreed with the items of the constructs "perceived ease of use" (64.3%), "contribution to language learning" (51.4%), and "voluntariness of use" (50.2%). The overall score of the items in "negative perceptions of use" is 2.49, which implies the refugees are not much worried about utilizing mobile devices in learning Turkish as a second/foreign language. These results are consistent with earlier studies, (Kallaya et al., 2009; Nassuora, 2012; Nikolopoulou, 2018), indicating that the refugees have a high tendency towards the use of mobile devices for learning. The reason for this might be that most refugees already use mobile devices frequently and successfully for communication purposes, as their family members or relatives are still in Syria. Therefore, they may not have had troubles in adapting these devices in learning environments.

The second research question, which aimed to explore the relationships among the constructs of the mobile learning tools acceptance, was answered favorably in reference to the findings from Pearson Correlation Analysis. The results of the quantitative data analysis revealed that there exists a concrete and significant correlation among all the constructs of the MLTAS. Contribution to foreign language learning demonstrated the strongest relationship with voluntariness of use (r=0.77)

suggesting that the refugees have a high pre-disposition for the use of mobile devices for learning as they perceive mobile learning help them improve their performance while learning Turkish. On the other hand, negative perceptions demonstrated the weakest relationship with voluntariness of use (r=-0.26), which indicates that the refugees' negative perceptions towards the use of mobile learning tools partly explain their willingness to use mobile devices as learning tools. These results, suggesting a direct relationship with the constructs validated, support the findings of earlier research which is based on relevant technology acceptance literature and the Unified Theory of Acceptance and Use of Technology (UTAUT) as a theoretical framework. Based on the data collected and the findings of earlier research, it can be concluded that the refugees' acceptance of mobile learning tools is high since they perceive mobile learning as advantageous at any time, any place, and on any device (Pullen et al., 2015).

In order to address the third research question, the effect of Syrian refugees' characteristics on their acceptance of mobile learning tools was investigated. Based on the results of Independent Samples T-Test, it was found that gender is only a determinant for NP that males are less negative towards the use of mobile devices as learning tools and both genders are willing to seize the mobile technology advantages in their learning. These results are similar to those obtained in study conducted by Alasmari and Zhang (2019) but contradict the results of the study conducted by Huang (2014) suggesting that females scored higher than the males on the intention to use mobile learning and the other studies where no significant gender differences were found regarding mobile device acceptance (Marrs, 2013; Papadakis, 2018; Pullen et al., 2015). In terms of age, significant differences were observed in in favor of the participants at the age of 50 and over in PEoU and VoU, and in favor of 36-42-year-olds in CtFLL. These findings are, in part, consistent with earlier research. Nikolopoulou (2018) highlighted significant differences in students' perceptions of mobile learning acceptance in favor of older secondary students; however, Marrs (2013) found significant differences among faculty members and students regarding their age suggesting that younger participants are significantly more positive than older participants on perceptions of m-learning. Yet, there are other studies which didn't confirm any significant age differences on the acceptance of mobile devices (Alasmari & Zhang, 2019; Donaldson, 2011; Huang, 2014; Papadakis, 2018; Pullen et al., 2015). As to the level of education, the findings showed that college graduates had higher PEoU and VoU levels.

However, these results are not supported by earlier research. In their study, Aliaño et al. (2019) found an inverse relationship with intent to use mobile devices for learning and academic year in university contexts; when the academic year is lower, the intent to use is greater. Another study examining the factors that affect students' intention to use mobile devices for learning was carried out by Huang (2014) suggesting that college level was not a significant predictor of students' intention to use mobile learning. In fact, it can be said that digital technologies like mobile devices are a natural environment surrounding youth. However, with the Covid-19 outbreak, mobile devices have become

primary learning tools for all age groups and students studying in different levels of education. From this point of view, it can be regarded as normal that there are no gender differences or older refugees take the advantage of mobile devices more than younger age groups.

In response to the fourth research question, the extent to which the refugees at B2 level achieved the learning outcomes specified in CEFR, the findings from two achievement tests revealed that the refugees got significantly higher scores in the second achievement test that they took three weeks after the first test. Based on these results, it can be concluded that the refugees gradually become accustomed to this new learning model. The study conducted by Özer and Kılıç (2018) support the results of the current study that the academic achievement of the learners improved over time as they utilized mobile devices as learning tools in the foreign language learning environment.

The effect of Syrian refugees' acceptance of mobile learning tools on their language achievement was also investigated within the scope of the study. While there is a significant increase in the refugees' achievement scores as mentioned above, mobile learning acceptance had no significant effect on foreign language achievement. Therefore, it can be concluded that there exist other motivating factors on refugees' language achievement different from mobile learning tools acceptance.

This study investigated Syrian adult refugees' acceptance and use of mobile learning tools during the Covid-19 pandemic. Understanding the factors that affect refugees' acceptance and use of mobile devices for learning is particularly important for promoting a successful and meaningful use of these devices in learning environments. The results of the study demonstrated that Syrian adult refugees were positive about using mobile devices in learning Turkish as a second/foreign language and they did better in the tests by the time. Depending on these results, it can be suggested that mobile devices should be integrated into the education system as a component of the curriculum. The application of this research is limited to Syrian adult refugees residing in Turkey and learning Turkish as a second/foreign language at B2 level. Further research is recommended in this field with different populations and sample size, and in different learning environments.

Declaration of conflicting interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Developing a Curriculum Efficacy Perception Scale for Teachers Educating Gifted Students

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Abstract

The aim of this study is developing a valid and reliable curriculum efficacy perception scale for teachers working with gifted students. Viewing the difference between variables of teachers'gender, field of study, age, seniority in the profession and seniority of working with gifted. The research was carried out with 350 teachers for Exploratory Factor Analysis, 382 for Confirmatory Factor Analysis, and 283 teachers for the analysis of the scale according to variables. As a result of the exploratory factor analysis conducted in the study, it was concluded that 35 items in the scale were gathered under three factors. As a result of the exploratory factor analysis, three factors explained 66.70% of the total variance for the whole scale. The value of the Cronbach Alpha (α) for the whole scale was highly reliable with .972. The findings of the research show that the scale of "Curriculum Efficacy Perception of Teachers Working with Gifted" is valid and reliable. The scale was applied to 283 teachers and viewed in accordance with the variables. It has been revealed that the scale dimensions of the teachers do not differ according to gender, field of study, age, seniority in the profession. However it differs for the subdimensions of seniority of working with gifted.

Keywords: Gifted students, teacher of gifted, curriculum efficacy perception scale

DOI: 10.29329/epasr.2022.248.10

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Introduction

The concept of giftedness, has many different definitions that have been discussed for centuries. Anderson (2000) argues that there are about three hundred different definitions of giftedness. Some of these definitions are as follows. The American Ministry of Education, in the Marland Report (Marland, 1971); defined it as the phenomenon of showing extraordinary ability within an advanced level of performance. In addition to this definition, six different advanced performance areas are listed in the report. While these areas are general intellectual ability, distinctive academic ability, creative/productive thinking, leadership ability, visual and performance arts ability, and psycho-motor ability, these areas also show that giftedness can emerge in different areas.

In the definition of giftedness made by the Ontario Ministry of Education in 1984, it has been accepted as showing learning skills that vary upper level school programs and displaying an unusual/top level domain of intellectual ability (Hoge, 1988).

According to Baykoç-Dönmez (2011); gifted and talented; In one, several or all areas of physical growth and development, cognitive-mental development, ability to understand and express oneself, social, emotional development and aesthetic development, which can be observed or measured by experts with various observation and measurement tools, the individuals the state of being at a higher level than their peers. Among gifted individuals, those who differ extraordinarily from their peers are considered gifted individuals (Sönmez, 2011).

Renzulli (1986); suggested that giftedness consists of three components and explained these components as commitment to task, above-average ability and creativity. Commitment to the task can be explained in simple terms as completing a task started or not leaving a task unfinished. In other words, it can also mean commitment to the task, being motivated. Above-average ability has been used in this theory to explain and distinguish between both general abilities and specific abilities. Moreover, in simple terms, above-average ability can be defined as having above-average potential in any field. Creativity is flexibility, fluency and originality in thought; It consists of a combination of concepts such as being open to experiences, sensitivity to situations and taking risks.

One of the most important factors in the educational development of gifted individuals has been teachers (Gökdere&Ayvacı, 2004; Lassing, 2009). Planning, preparation and implementation of education programs for gifted students is one of the most studied and researched areas. Due to the individual characteristics and abilities of gifted students; It is not possible to talk about a single agreed program for the education of these students. The primary purpose of gifted programs is to provide opportunities for gifted children and youth to meet educational needs that cannot be met in traditional classrooms. Through these opportunities, gifted students will be able to develop their talents by receiving education appropriate to their potential (Emir, 2017). Gifted students may be more affected

by their teachers' attitudes than other students. In addition to having the qualifications of all good qualified teachers, the teachers of these students should also have mastery about the characteristics of special talents and the models, strategies, methods and techniques used in the education of these students (Sak, 2010).

The extent to which the effects of teachers on the development of students constitute a significant and important dimension is a phenomenon that has been discussed by education researchers. However, teachers who are expected to positively affect the development of students are expected to have a range of competencies. According to MEB (2008), competence is the state of having the professional knowledge, skills and attitudes required to perform duties specific to a profession. The concept of competence is the characteristics that must be possessed in order to perform a job or task effectively. Competence is a concept that expresses the abilities, knowledge and skills needed to perform a task and fulfill the responsibilities required by the task. This concept emphasizes the capacity to fulfill a certain task or role at an acceptable level (Şahin, 2004). The truth that reason and common sense told educators and parents a long time ago becomes clearer day by day as a result of research. As a result, the quality of the teacher is very important. The knowledge and skills of teachers are the most important factor affecting students' learning at school. The qualifications of teachers are even more important for children who need special education (Leigh & Mead, 2005).

Regardless of which education option they receive or in the educational environment, it can be thought that the gifted student can naturally see the greatest impact from his teachers. Emphasizing that teachers should take a series of precautions in programming, planning, implementation and evaluation in the classroom environment, since the interest, learning speed and depth of gifted children are different from those of other children; draws attention to the fact that teachers of special talents should have some different characteristics and equipment. It is significant that teachers take the lead for the academic and personal development of gifted students. For this purpose, Program Model for Supporting Interpersonal Communication Skills for Gifted Students to increase the personal and interpersonal communication skills of gifted students has been developed for gifted students (Kara, 2020). In this context, it can be argued that teachers who will teach gifted students should have different standards and competencies compared to general education teachers (Metin&Dağlıoğu, 2004). For gifted students, the logic of curriculum development can also work according to general curriculum development models in general. However, differentiation strategies should also be used within the scope of curriculum development in these students. Therefore, gifted students should know and be able to apply differentiation strategies comprehensively by their teachers. Differentiation is not leaving the program to be implemented to meet the readiness needs of students, but changing the curriculum interesting according to student levels (Tomlinson& Strickland, 2005). In this context, due to the recent trends in the education system for heterogeneous classes (for

enrichment programs), where gifted and normal students receive special education together using the same curriculum structure and classroom environment, such content knowledge proficiency is required for both normal and gifted program teachers (Ehlers and Montgomery,1999; Chipego, 2004). It is necessary for teachers to design the education process especially according to the individual suitability of the student. According to Heacox (2002) it is necessary to determine how students differ from others in terms of interest, learning styles, learning speed and readiness before they start teaching. Accordingly, after the interests and needs are determined, it is necessary to master the curriculum development, assessment and evaluation techniques that should be applied according to these students.

There are ten competencies developed by VanTassel-Baska and Johnsen (2007) by analyzing the differences in current teacher competency domain standards. The principles in these teacher competence areas are named as the characteristics and development of gifted students, individual learning differences, teaching strategies, learning environments and social interaction, language and communication, instructional planning, evaluation, professional and ethical practices, cooperation. Therefore, it can be said that the competencies that teachers working with gifted students should have are to offer a teaching environment according to the individuality of gifted students and to have the capacity to prepare programs specific to them. For the development and advancement of education levels for societies, it is of great importance that teachers develop their competencies for gifted students. For this reason, as with teachers in other fields, the perception of program efficacy towards teachers of gifted students should be measurable. In this context, it is scientifically important to develop a measurement tool that can measure these competencies and bring it into the literature.

In this study, a program efficacy perception scale, which includes the characteristics of gifted students and the curriculum development elements specific to them, was developed and applied to teachers educatinggifted students. In this direction, the scale that can be applied in line with the scientific purposes aimed for teachers in the literature is seen as a necessary element in the field of gifted education.

The main purpose of this research is to develop a valid and reliable curriculum efficacy perception scale for teachers educating gifted students.

In addition, answers to the following questions were answered in the study.

In the competencies of teachers, is there a significant difference between;

a. gender

b. age,

c. branch,

d. working time in the profession,

e. working time in giftededucation.

Method

A descriptive survey model was used in this study to determine the curriculum efficacy perceptions of teachers educatinggifted students. The descriptive survey model aims to reveal a situation as it exists (Karasar, 2013). In the study, it was also aimed to reveal the curriculum efficacy perceptions of the teachers with the scale developed in the study. This study is in accordance with the descriptive survey model in terms of revealing a valid and reliable curriculum efficacy perception scale for teachers educating gifted students. In this context, in order to develop a scale and collect data in the research, systematically scanning the relevant literature, conducting teacher interviews, creating an item pool, getting expert opinion, determining the content validity index with the Lawshe technique, providing construct validity and reliability, and data collection with the developed scale were performed.

Population and Sample of the Research

The universe of this research consisted of 2223 Science and Art Center (BİLSEM) teachers educating gifted students. In the study, 3 independent samples were taken by random sampling method. Scale applications were applied to 350 teachers in total for exploratory factor analysis, 382 teachers for confirmatory factor analysis, and 283 teachers in order to determine program competencies and make comparisons according to independent variables. There are different opinions about sample size in scale development. While Tavşancıl (2014) says that the number of items should be ten times, Tabachnick and Fidel (2007) consider five times as sufficient. In this context, Child (2006) evaluates 300 as sufficient and 1000 as excellent in the number of samples. The 3 samples of this study are more than 7 times the number of items. In addition, since the universe of teachers educating gifted students in BİLSEMs across Turkey is 2223 in general, the number of samples reached for this study is sufficient.

Data Collection

In this study, the program efficacy perception scale of teachers educating gifted students was developed and used to collect data. The scale consisted of 35 items and 3 sub-dimensions and was prepared in a 5-point likert type. The development process of the scale is given below under the title of validity and reliability studies of the draft scale.

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Validity and Reliability Studies of the Draft Scale

A literature review was conducted to create an item pool in the development of the program efficacy perception scale of teachers educatinggifted students. In addition, interviews were conducted with 15 teachers educatinggifted students. In the interviews, questions were asked about the situations that the teachers saw in themselves as lacking. As a result of literature review and teacher interviews, an item pool consisting of 49 items was created. The Lawshe technique was applied to 26 experts to ensure the content validity of the scale. The content validity ratio calculation technique was developed by Lawshe (1975). In the Lawshe technique, a minimum of 5 and a maximum of 40 expert opinions are needed. This approach, known as the Lawshe technique, consists of 6 stages.

a) Establishment of the field experts group

b) Preparation of draft scale forms

c) Obtaining expert opinions

d) Obtaining coverage validity rates for items

e) Obtaining content validity indices for the scale

f) Creation of the final form according to the content validity rates/index criteria

Accordingly, the content validity rates are obtained by collecting the opinions of the experts on any item. Content validity ratios (CVRs) are obtained by 1 minus the ratio of the number of experts who stated their opinion of "appropriate" on an item to the total number of experts who gave their opinion on the item

$$CVR = \frac{NE}{N/2} - 1$$

Here; NE indicates the number of experts who say “appropriate” to the item, and N represents the total number of experts who have expressed an opinion on the item (Lawshe, 1975). In this context, opinions were taken from a total of 26 field experts in this study. As a result of the Lawshe technique, the items to be removed from the scale were determined.

According to the calculations of AyreandScally (2014) using the CRITBINOM function returned values for the critical number of experts 1 fewer for all panel sizes compared with the calculations shows that, the CVR lower value should be 0,385.In this study, 4 items (1,4,17,30) with

0.385 and below as a result of CVR calculations and shown in Table 1 were excluded from the item pool. As a result, 45 items were found suitable for exploratory factor analysis.

Table 1.CVR Values of The Items As A Result of the Lawshe Technique

ITEM NO	CVR*	ITEM NO	CVR*	ITEM NO	CVR*	ITEM NO	CVR*	ITEM NO	CVR*
1	0,153	**11**	0,615	**21**	0,923	**31**	0,769	**41**	0,769
2	0,538	**12**	0,923	**22**	0,846	**32**	1,00	**42**	0,692
3	0,615	**13**	1,00	**23**	0,538	**33**	0,615	**43**	1,00
4	0,385	**14**	0,692	**24**	0,538	**34**	0,846	**44**	0,923
5	0,769	**15**	0,846	**25**	0,538	**35**	0,746	**45**	0,923
6	0,769	**16**	0,461	**26**	0,615	**36**	0,846	**46**	0,769
7	0,692	**17**	0,385	**27**	1,00	**37**	0,769	**47**	0,846
8	0,769	**18**	1,00	**28**	0,846	**38**	0,846	**48**	0,923
9	0,846	**19**	1,00	**29**	0,923	**39**	0,846	**49**	1.00
10	0,538	**20**	0,923	**30**	0,260	**40**	0,769		

Content Validity Index (CVI) = 0.792

Exploratory factor analysis (EFA) was performed for construct validity analysis of the 45-item draft scale data formed after the Lawshe technique. "KMO" (Kaiser-Meyer-Olkin) and "Bartlett Sphericity" tests were performed to evaluate the suitability of the data obtained in the study for EFA. According to Tavşancıl (2014), the Kaiser-Meyer-Olkin (KMO) test should be performed to determine the adequacy of the data obtained from the sample in factor analysis. For the validity and reliability of the scale, exploratory factor analysis was performed using the principal component analysis method and the Direct Oblimin rotation technique. The reliability coefficient of the measurement tool was calculated. The Cronbach Alpha (α) value was used as the reliability coefficient. In addition, confirmatory factor analysis (CFA) of the structure obtained in the study was performed.

Exploratory Factor Analysis

Before performing Exploratory Factor Analysis (EFA), the suitability of the data for factor analysis was examined. The result of the analysis is shown in Table 2. It is an excellent value when the value calculated in the KMO test approaches 1.00; a value below 0.5 is unacceptable. If it is over 0.6 and the Barlett test is significant, it indicates that the data in the scale come from a multivariate normal distribution and are suitable for factor analysis (Büyüköztürk, 2002). In the study, the KMO value of the scale was calculated as 0.965 and the Bartlett test was found to be significant. These values examined showed that factor analysis could be done.

Table 2.KMO-Bartlett Test Result Related to the Scale

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		,965
Bartlett's Test of Sphericity	Approx. Chi-Square	14817,032
	Df	990
	Sig	,000

As the first step in the factor analysis, the step of determining the number of dimensions was determined. For this purpose, principal component analysis was performed to determine the factor structure of the scale (Table 3). As a result of this process, 5 factors with the eigen value of the scale greater than 1 were determined. It was determined that the factors after the third factor overlapped and their contribution to the total variance was low. In addition, as seen in the scree plot in Figure 1, the first high-accelerated drop was seen in the third factor.

Table 3. The Initial Eigenvalues of the Factors and The Initial Variances They Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	23,121	51,379	51,379	23,121	51,379	51,379
2	3,451	7,668	59,047	3,451	7,668	59,047
3	1,950	4,334	63,380	1,950	4,334	63,380
4	1,200	2,666	66,047	1,200	2,666	66,047
5	1,001	2,225	68,272	1,001	2,225	68,272

ExtractionMethod: Principal Component Analysis.

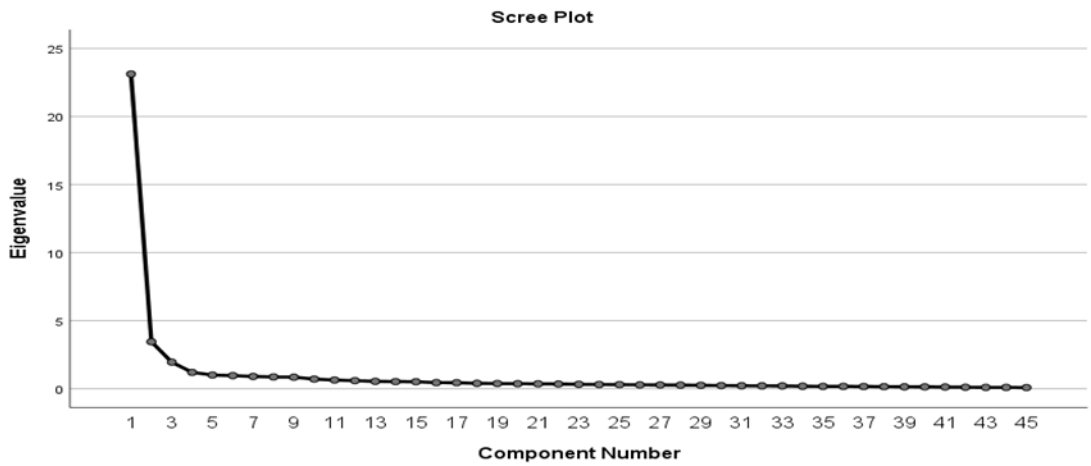

Figure 1. Scree-Plot Chart

Scree-plot drawn without factor limitation to determine the number of dimensions is shown in Figure 1. In addition, it was decided to group the items in three factors by comparing them with the

total variance and scree plot explained for the scale items. Although the 23% explanation of the total variance of the first factor indicates that the scale may be unidimensional, the fact that the three-factor structure explains approximately 63% of the total variance supports the decision that the scale should have three factors.

Principal component analysis was repeated using the Directoblimin vertical rotation method to clarify the data structure. Items with a factor loading and total variance value of less than 0.45 and items with an item-total correlation of less than 0.45 and a load difference of less than 0.10 were excluded from the scale. In determining the number of dimensions, it became clear that 3 factors with explained variance greater than 5% should be emphasized and explained 66,701 % of the total variance. The eigenvalues of the factors and their explained variance ratios as a result of the rotations are shown in Table 4.

Table 4. Eigenvalues of the Factors and Their Explained Variances

	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	18,443	52,694	52,694	18,443	52,694	52,694
2	3,054	8,726	61,420	3,054	8,726	61,420
3	1,848	5,281	66,701	1,848	5,281	66,701

When the loadings of the items in the factors were examined, among the load values in more than one factor, the items with a factor load below 0.45 and the items that did not load any factor (1,2,3,4,15,22,23,27,28,29) were excluded from the scale (Büyüköztürk, 2018). After these items were removed, the factor loads of the 3-dimensional "Scale of Curriculum Perception of Teachers Educating Gifted Students" consisting of 35 items are shown in Table 5.

There were 15 items in the 1st dimension, 11 items in the 2nd dimension, and 9 items in the 3rd dimension. The factor loading values of the scale varied between ,499 and ,880. The 1st dimension explained 52,964 % of the total variance, the 2nd dimension 8,726%, and the 3rd dimension 5,281 and the total variance of the 3 dimensions was 66,701 %. The distribution of the items of the scale according to the sub-factors and their factor loads are shown in Table 3 above. In addition, the sub-dimensions determined as a result of factor analysis and the items loaded in these dimensions are shown in Table 5.

Table 5. Sub-dimensions Determined as a Result of Factor Analysis and Items Loaded in These Dimensions

Factor	Total of Items	Number of Items
Factor 1	15	31,32,33,34,35,36,37,38,39,40,41,42,43,44,45

Factor 2	11	5,6,7,8,9,10,11,12,13,14,19
Factor 3	9	16,17,18,20,21,24,25,26,30

As seen in Table 5, factor 1 consists of 15 items (31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45), and factor 2 consists of 11 items (5,6,7,8,9,10,11,12,13,14,19), Factor 3 consisted of 9 items (16,17,18,20,21,24,25,26,30). The items in each dimension were examined and named. The first sub-dimension was named "Curriculum Development Knowledge", the second sub-dimension was named "Applicability according to Student", and the third sub-dimension was named "Assessment and Evaluation Knowledge".

Table 6. Dimension Factor Loadings, Factor Common Variance, Item-Total Correlation and T-Test Analysis Results of 27% Lower and Upper Groups of Scale Items

Item No	Factors			Comunalities	Item-Total Correlation	27% group t-test results.
	Curriculum Development Knowledge	Applicability according to Student	Assessment and Evaluation Knowledge			
42	0,880			0,811	0,797	18,693
41	0,870			0,786	0,784	18,139
43	0,854			0,785	0,789	18,514
40	0,848			0,780	0,787	17,926
44	0,827			0,748	0,780	18,756
39	0,814			0,711	0,753	17,571
37	0,775			0,541	0,626	12,426
38	0,753			0,519	0,611	12,287
36	0,722			0,671	0,763	17,325
32	0,718			0,718	0,798	18,286
34	0,701			0,657	0,749	16,986
31	0,696			0,718	0,790	19,557
33	0,651			0,658	0,757	19,398

35	0,595					0,714	0,801	18,875
45	0,499					0,572	0,751	17,924
11		0,840				0,631	0,575	12,943
12		0,787				0,645	0,645	17,792
8		0,765				0,680	0,692	21,659
13		0,752				0,581	0,607	14,283
9		0,735				0,668	0,696	18,462
5		0,692				0,661	0,703	23,169
14		0,673				0,626	0,698	19,964
19		0,663				0,509	0,535	11,356
10		0,646				0,653	0,732	18,135
6		0,645				0,629	0,672	20,032
7		0,631				0,615	0,670	21,454
20			0,851			0,750	0,726	19,313
21			0,793			0,734	0,744	17,251
18			0,766			0,681	0,713	16,776
26			0,694			0,739	0,788	19,306
25			0,686			0,726	0,778	18,823
24			0,628			0,667	0,749	18,954
30			0,600			0,535	0,679	16,278
17			0,597			0,703	0,794	20,727
16			0,560			0,524	0,656	14,281

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Independent groups t-test was applied between 27% lower group and upper group according to the scale total score of the scale obtained for item analysis. The t-test results applied are shown in Table 6. According to the results of the analysis, it was determined that the item score averages of the upper 27% group for all items were significantly ($p<.001$) higher than the item score averages of the lower 27% group. According to Table 6, t-test values vary between 11,356-23.169. According to this result, the items in the scale can significantly distinguish participants with different competencies.

The reliability coefficient of the measurement tool was calculated. The Cronbach Alpha (α) value was used as the reliability coefficient. Cronbach Alpha (α) value for the 1st dimension is highly reliable with .963, Cronbach Alpha (α) value for the 2nd dimension is highly reliable with .936, and Cronbach Alpha (α) value for the 3rd dimension is .935 highly reliable and the Cronbach Alpha (α) value for the whole test was .972, which was highly reliable. A reliability coefficient of 0.70 or higher is considered sufficient for the reliability of test scores (Büyüköztürk, 2018).

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) was conducted to determine the measurability of latent structures of this scale, which measures three sub-structures of the scale of attitude towards the competencies of teachers educating gifted students. It is aimed to examine the structure revealed by descriptive factor analysis by performing a confirmatory factor analysis in another sample. In this direction, a new sampling scale of 382 people was applied.

Confirmatory factor analysis was performed using the AMOS program. In line with the relevant analysis; $\chi 2/df$ (Chi-Square/Degree of Freedom), RMSEA (Root Mean Square Error of Approximation), NFI (Normed Fit Index), CFI (Comparative Fit Index), and SRMR (Standardized Root Mean Square Residual) values are discussed. The path diagram for confirmatory factor analysis is shown in Figure 2.

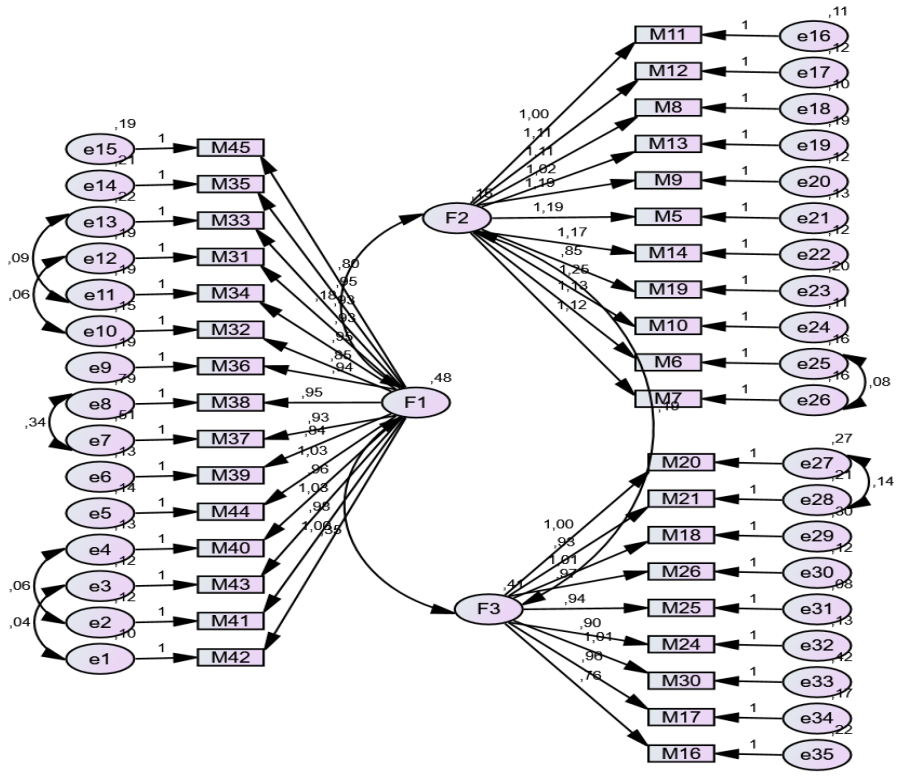

Figure 2. Confirmatory Factor Analysis Results

In this context, Chi-square (x2= 2.985, sd= 550,p=0.00) was found when the fit index values were analyzed as a result of the CFA applied regarding the structure of the scale, which consisted of 35 items and the three factors formed by these 35 items, and the results of the analysis carried out considering the suggested modifications on the model. Value was found to be significant. The fit index values were found to be RMSEA= .072, NFI= .89, CFI= .92, IFI= .92, TLI=0.91 RMR= .025.

In the literature, some fit criteria are used to evaluate the results obtained as a result of CFA. Accordingly, a χ2 /df ratio of 2 or less, a RMSEA value of .05 or less, and a CFI value of .95 and above indicate a good fit for model data fit; A χ2/sd ratio between 2 and 5, a RMSEA value of less than .08, and a CFI fit value of .90 or above are considered to indicate an acceptable level of model-data fit (Çokluk, Şekercioğlu&Büyüköztürk, 2010; Schumacker& Lomax, 2004; Şimşek, 2007). Based on these data in the literature, when the fit indices of the study are examined, the χ2/df fit value of 2.985 shows that the model data fit is at an acceptable level. In the study, the SRMR index value was calculated as 0.025. According to Schermelleh-Engel, Moosbrugger& Müller (2003), this value shows that the model has an acceptable fit. The GFI value was calculated as 0.90. The fact that these values are 0.90 and above indicates that the model fits well (Schumacker&Lomax, 2010). The RMSEA value was calculated as 0.072. According to Schermelleh-Engel, Moosbrugger& Müller

(2003), this value model seems to have an acceptable fit. The CFI value was calculated as 0.92. According to Sümer (2000), this value being 0.90 and higher indicates that the model fits well.

Table 7. Fit Index Values of the Model

Index	Normal Value	Acceptable Value	Fit Values of the Current Model	Fit
NFI	>0.95	>0.90	0,89	Acceptable
TLI	>0.95	>0.90	0,91	Acceptable
CFI	>0.95	>0.90	0,92	Acceptable
RMSEA	<0.05	<0.08	0,072	Acceptable
RMR	<0.05	<0.08	0,025	Acceptable
X^2 p value	p>0.05		0,00	Acceptable
X^2/sd	<2	<5	2,985	Acceptable

Analysis of Data

The scale, the validity and reliability of which was proven as a result of CFA, was compared in terms of the level of having program efficacy perceptions of teachers working in science and art centers and different variables. Before the analysis of the data, normality tests of the data distribution according to the variables were performed. For the normality distribution, the Shapiro Wilks test was used for variables with a frequency of less than 50, and the Kolmogorow-Smirnow test for those with a frequency greater than 50. When the normality assumptions of all variables were examined, it was revealed that they did not show normal distribution, so non-parametric tests Mann Whitney-U and Kruskall Wallis-H tests were used to make comparisons.

Results

In this part of the study, comparisons of the program efficacy perceptions of teachers educatinggifted students in terms of gender, age, branch, working time in the profession and working time with special talents are given in line with the scale developed within the scope of the study.

After the exploratory and confirmatory factor analysis, 3 dimensions emerged in the scale, which was developed to realize the purpose of the study. The scale was created by determining the first dimension as program information, the second dimension as applicability according to the student, and the third dimension as measurement and evaluation information. In order to collect data in line with research problems, the first dimension of the scale form to be applied in order to make

comparisons in terms of gender, age, branch, working time in the profession and working time with special talents was listed as applicability according to the student, the second dimension as program development information, and the third dimension as measurement and evaluation information. positioned accordingly.

Teachers' Program Proficiency Levels

Regarding the answers given by the teachers to the developed scale, the arithmetic means of the program efficacy perception levels according to the scale dimensions are given in Table 8.

Tablo 8. Arithmetic Means According to Program Proficiency Perception Levels by Scale Dimensions

ITEM NO	ITEM	*N*	*Mean*	*Std. Deviation*
1	When I communicate with my students, I consider their needs.	283	4,52	,554
2	When I communicate with my students, I take their cognitive characteristics into account.	283	4,52	,528
3	When I communicate with my students, I consider their affective characteristics.	283	4,52	,548
4	I can contribute to the development of my students' own ideas.	283	4,49	,598
5	I can create learning environments suitable for my students to develop their critical thinking skills.	283	4,47	,603
6	I can carry out teaching activities collaboratively with my students.	283	4,46	,596
7	I am open to new ideas in the activities we do with my students.	283	4,61	,523
8	I show a guiding attitude towards my students.	283	4,53	,573
9	I prefer to offer a democratic environment to my students instead of being authoritarian in classroom management.	283	4,52	,592
10	I try to create an innovative environment while performing teaching activities.	283	4,48	,609
11	I act impartially when evaluating my students.	283	4,63	,577
F1 TOTAL		283	4,52	,449
12	I think that I am competent in planning activities in accordance with teaching strategies, methods and techniques.	283	4,17	,776
13	I can choose different strategies, methods and techniques that can be used in instructional planning in a way that will achieve the learning outcomes.	283	4,27	,707
14	I feel competent in creating gains related to programs.	283	4,17	,784
15	I feel competent in creating content related to programs.	283	4,17	,761
16	I feel competent in making evaluations about the programs.	283	4,08	,795
17	I can apply the logic of program development in an interdisciplinary context.	283	4,30	,714
18	I am competent in producing national projects with my students.	283	4,17	,843
19	I am competent in producing international projects with my students.	283	4,18	,739
20	I can use skill-oriented teaching approaches suitable for the programs developed for gifted students in my activities.	283	4,19	,767

21	I can produce activities that can develop critical thinking skills in accordance with the programs developed for gifted students.	283	4,18	,759
22	I can produce activities that can develop analytical thinking skills in accordance with the programs developed for gifted students.	283	4,19	,767
23	I can produce activities that can develop innovative thinking skills in accordance with the programs developed for gifted students.	283	4,16	,805
24	I can produce activities that can develop inquiry-based skills in accordance with the programs developed for gifted students.	283	4,17	,809
25	I can produce activities that can develop creative thinking skills in accordance with the programs developed for gifted students.	283	4,01	,913
26	I can effectively implement differentiated instructional programs specific to my gifted students.	283	3,56	1,078
F2 TOTAL		283	4,13	,665
27	I can measure and evaluate my students' readiness levels before starting a new topic.	283	4,31	,669
28	I can use alternative assessment methods and techniques according to the characteristics of my students.	283	4,25	,719
29	I can evaluate the results obtained with the measurement method I have applied by using appropriate analysis techniques.	283	4,04	,824
30	I can use measurement and evaluation techniques suitable for the individual differences of my students.	283	4,23	,767
31	I can use assessment and evaluation techniques suitable for my students' learning.	283	4,25	,704
32	I can give motivating feedback to my students according to the measurement and evaluation results.	283	4,35	,638
33	I can give correct and constructive feedback to the relevant stakeholders according to the measurement and evaluation results.	283	4,30	,672
34	I can rearrange the teaching and learning processes according to the measurement and evaluation results.	283	4,28	,711
35	I can prepare an individualized education plan for each student.	283	4,00	,921
F3 TOTAL		283	4,22	,603
OVERALL TOTAL		283	4,27	,522

As can be seen in Table 8, teachers' perceptions of efficacy regarding the three dimensions of the scale were determined as $\bar{x}$=4.27 in total. The general average for the first dimension of the scale was calculated as $\bar{x}$=4.52, the general average for the second dimension $\bar{x}$=4.13, and the general average for the third dimension $\bar{x}$=4.22. When the overall mean between the dimensions is examined, the answers given to the first dimension, the relativity to the student, revealed that the teachers felt themselves “completely sufficient” in this context. Responses to the second dimension, curriculum proficiency, revealed that teachers felt "completely competent" in this context. The answers given to

the third dimension, measurement and evaluation knowledge, revealed that the teachers felt themselves “adequate” in this context.

In the first dimension of the scale, teachers' perceptions of efficacy were determined as $\bar{x}$=4.52. In this case, it was revealed that the teachers considered themselves completely sufficient in the dimension and sub-items of "relevance to the student in the program application". When the sub-items of this dimension were examined, it was determined that teachers' perceptions of efficacy were at the highest level for all items. In this dimension, it has been determined that teachers consider themselves sufficient. The 11th item of the scale "I act impartially when evaluating my students ($\bar{x}$=4.63)" and the 7th item of the scale "I am open to new ideas in the activities we carry out with my students ($\bar{x}$=4.61)" proficiency was at the level of "I am completely competent". Although the 6th item of the scale, "I can carry out teaching activities with my students in cooperation ($\bar{x}$=4.46)", has the lowest arithmetic mean in the dimension, an opinion was reported at the level of "I am completely competent". As a result, it was determined that the teachers' proficiency regarding this efficacy dimension was quite good.

In the second dimension of the scale, teachers' perceptions of efficacy were determined as $\bar{x}$= 4.13. It has been determined that teachers consider themselves sufficient in the dimension of having knowledge of curriculum development. For the 17th item of the scale, "I can apply the logic of curriculum development in an interdisciplinary context ($\bar{x}$=4.30)", and the 13th item of the scale, "I can choose different strategies, methods and techniques that can be used in instructional planning ($\bar{x}$=4.27)" their proficiency is "I am completely competent". The 26th item of the scale, "I can effectively apply differentiated education programs specific to my gifted students ($\bar{x}$=3.36)", on the other hand, expressed an opinion at the level of "I am sufficient". As a result, it was determined that teachers' perceptions of curriculum efficacy regarding this efficacy dimension were quite good both in terms of educational activities and curriculum development information.

In the third dimension of the scale, teachers' perceptions of efficacy were determined as $\bar{x}$= 4.22. In this case, it was revealed that the teachers considered themselves completely sufficient in the dimension of having measurement and evaluation knowledge and its sub-items. When the sub-items of this dimension were examined, it was determined that teachers' perceptions of efficacy were at the highest level for all items. When the sub-items of this dimension were examined, it was determined that teachers' perceptions of efficacy were at the highest level for all items. In this dimension, it has been determined that teachers consider themselves sufficient. “I can measure and evaluate the readiness level of my students before starting a new topic ($\bar{x}$=4.31)”, which is the 27th item of the scale, and “I can give correct and constructive feedback to the relevant stakeholders according to the measurement and evaluation results, which is the 33rd item of the scale.($\bar{x}$=4,30) expressed an opinion at the level of "I am completely competent". The 35th item of the scale is “I can prepare an

individualized education plan specific to each student. ($\bar{x}$=4.00)", on the other hand, expressed an opinion at the level of "I am sufficient". As a result, it was determined that teachers' perceptions of curriculum efficacy regarding this efficacy dimension were quite good both in terms of educational activities and curriculum development information.

Comparison of Teachers' Perceptions of Efficacy by Gender

Comparison tests were conducted to determine whether the program efficacy perceptions of teachers educatinggifted students differ according to the gender variable. The Mann Whitney-U Test, one of the non-parametric tests, was used to compare the efficacy perceptions of the teachers, since the data distribution was not normal. The statistics obtained as a result of the test are shown in Table 9.

Table 9. The Results of the Mann Whitney-U Test Compared According to the Gender of theTeachers

	Gender	N	MeanRank	Sum of Ranks	*U*	*p*
FACTOR1	Woman	144	150,08	21611,00	8845,000	,087
	Man	139	133,63	18575,00		
FACTOR2	Woman	144	140,49	20231,00	9791,000	,752
	Man	139	143,56	19955,00		
FACTOR3	Woman	144	143,15	20613,00	9843,000	,809
	Man	139	140,81	19573,00		
TOTAL	Woman	144	144,54	20813,50	9642,500	,595
	Man	139	139,37	19372,50		

As can be seen in Table 9, according to the Mann Whitney U Test result, teachers' Factor 1 (U=8845,000 p>.05) , Factor 2 (U=9791,000 p>.05) , Factor 3 (U=9642,500 p>. 05). It was also analyzed that there was no significant difference between the total scores of the teachers according to the gender variable (U=9642,500 p>.05), and it was determined that there was no significant difference in the teachers' perceptions of efficacy in this regard.

Comparison of Teachers' Perceptions of Efficacy by Age

Comparison tests were conducted to determine whether the efficacy perceptions of teachers educatinggifted students differ according to the age variable. The Kruskal Wallis H Test, one of the non-parametric tests, was used to compare the efficacy perceptions of the teachers, since the data distribution was not normal. The statistics obtained as a result of the test are shown in Table 10.

Table 10. Kruskal Wallis-H Test Results Compared According to the Ages of the Teachers

	Age	N	MeanRank	df	H	p
FACTOR1	26-30	23	139,33	5	5,210	,391
	31-35	49	147,85			
	36-40	65	131,40			
	41-45	78	134,54			
	46-50	46	151,76			
	51-55	22	169,14			
FACTOR2	26-30	23	129,26	5	1,861	,868
	31-35	49	134,74			
	36-40	65	143,78			
	41-45	78	148,99			
	46-50	46	138,01			
	51-55	22	149,80			
FACTOR3	26-30	23	152,72	5	1,249	,940
	31-35	49	146,79			
	36-40	65	134,65			
	41-45	78	140,99			
	46-50	46	140,71			
	51-55	22	148,14			
TOTAL	26-30	23	137,22	5	,729	,981
	31-35	49	141,05			
	36-40	65	139,93			
	41-45	78	142,88			
	46-50	46	140,49			
	51-55	22	155,25			

When Table 10 is examined, the results of the Kruskal-Wallis H Test among the teachers' Factor 1 (H=5,210 p>.05), Factor 2 (H=1,861 p<.05), Factor 3 (H=,729 p>.05) scores, it was analyzed that there was no significant difference according to the age variable (U=8845,000 p>.05) and as a result, it was determined that there was no significant difference in teachers' perceptions of efficacy. As a result of the Kruskal-Wallis H Test, it was analyzed that there was no significant difference between the total scores of the teachers according to the age variable (H=,729 p>.05). According to this result, it was examined whether teachers' perceptions of efficacy for the education of gifted students changed for the total scores of the scale, and as a result, it was determined that there was no significant difference in teachers' efficacy perceptions.

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Comparison of Teachers' Perceptions of Efficacy Through Disciplines

Comparison tests were conducted to determine whether the efficacy perceptions of teachers educatinggifted students differ according to the branch variable. The Kruskal-Wallis H Test, one of the non-parametric tests, was used to compare the efficacy perceptions of the teachers, since the data distribution was not normal. The statistics obtained as a result of the test are shown in Table 11.

Table 11. The Results of the Kruskal Wallis-H Test Compared According to the Disciplines of the Teachers

	Disciplines	N	MeanRank	df	H	p
FACTOR1	ICT	14	127,46			
	Biology	16	167,50			
	Geography	12	110,42			
	Philosophy	15	163,03			
	Literature	15	134,77			
	Science	15	127,40			
	Physics	15	142,57			
	Art	14	154,14			
	Elementary School Maths	15	122,67			
	Chemistry	13	93,12	18	23,456	,174
	High School Maths	15	102,83			
	Music	16	160,03			
	Counselling	15	137,27			
	Elementary School Teaching	14	158,14			
	SocialScience	15	188,73			
	History	15	127,37			
	Technology Design	15	148,87			
	Turkish	16	147,13			
	Foreign Language	18	164,83			
FACTOR2	ICT	14	143,21			
	Biology	16	161,00			
	Geography	12	128,33			
	Philosophy	15	140,07			
	Literature	15	113,83	18	20,369	,312
	Science	15	131,87			
	Physics	15	159,67			
	Art	14	163,64			
	Elementary School Maths	15	140,03			

	Chemistry	13	82,00			
	High School Maths	15	119,87			
	Music	16	158,25			
	Counselling	15	115,20			
	Elementary School Teaching	14	137,64			
	SocialScience	15	182,40			
	History	15	143,97			
	Technology Design	15	153,67			
	Turkish	16	146,41			
	Foreign Language	18	161,00			
FACTOR3	ICT	14	130,39			
	Biology	16	151,94			
	Geography	12	108,29			
	Philosophy	15	132,73			
	Literature	15	118,20			
	Science	15	124,50			
	Physics	15	163,80			
	Art	14	171,93			
	Elementary School Maths	15	118,83			
	Chemistry	13	103,92			
	High School Maths	15	121,77			
	Music	16	173,72			
	Counselling	15	160,00			
	Elementary School Teaching	14	154,14	18	17,836	,466
	SocialScience	15	159,17			
	History	15	143,90			
	Technology Design	15	136,40			
	Turkish	16	149,44			
	Foreign Language	18	158,56			
TOTAL	ICT	14	134,46			
	Biology	16	161,00			
	Geography	12	117,17			
	Philosophy	15	146,77			
	Literature	15	118,57	18	20,957	,282
	Science	15	130,47			
	Physics	15	158,53			
	Art	14	165,00			
	Elementary School Maths	15	131,23			

	Chemistry	13	82,69
	High School Maths	15	112,60
	Music	16	167,16
	Counselling	15	134,43
	Elementary School Teaching	14	150,61
	SocialScience	15	182,27
	History	15	132,77
	Technology Design	15	145,00
	Turkish	16	151,44
	Foreign Language	18	157,83

When Table 11 is examined, as a result of the Kruskal-Wallis H Test performed, the teachers' Factor 1 (H=23.456 p>.05), Factor 2 (H=20.369 p>.05), Factor 3 (H=17,836 p>.05) scores differ between branches. It was determined that there was no significant difference according to the variable of the teacher and as a result, it was determined that there was no significant difference in teachers' perceptions of efficacy. As a result of the Kruskal-Wallis H Test, it was determined that there was no significant difference between the teachers' total scores according to the branch variable (H=20-957 p>.05). It was determined that there was no significant difference in teachers' efficacy perceptions by looking at whether the perceptions of teachers' efficacy towards the education of gifted students according to their branches changed for the total scores of the scale.

Comparison of Efficiency Perceptions of Teachers According to Their Working Period in the Proffession

Comparison tests were conducted to determine whether the efficacy perceptions of teachers educatinggifted students differ according to the variable of working time in the profession. The Kruskal-Wallis H Test, one of the non-parametric tests, was used to compare the efficacy perceptions of the teachers, since the data distribution was not normal. The statistics obtained as a result of the test are shown in Table 12.

Table 12. The Results of the Kruskal Wallis-H Test, Which is Compared According to the Working Time of the Teachers in the Profession

	Working Time of Profession	N	MeanRank	df	H	p
FACTOR1	0-5 years	17	173,71			
	6-10 years	49	151,18			
	11-15 years	61	123,55	4	7,112	,130
	16-20 years	72	137,14			
	21 yearsandover	84	147,79			
FACTOR2	0-5 years	17	155,03	4	4,399	,355

	6-10 years	49	132,76			
	11-15 years	61	129,77			
	16-20 years	72	155,49			
	21 yearsandover	84	142,08			
FACTOR3	0-5 years	17	171,29			
	6-10 years	49	152,77			
	11-15 years	61	130,10	4	4,487	,344
	16-20 years	72	141,28			
	21 yearsandover	84	139,05			
TOTAL	0-5 years	17	163,12			
	6-10 years	49	141,54			
	11-15 years	61	129,14	4	3,170	,530
	16-20 years	72	148,96			
	21 yearsandover	84	141,37			

When Table 12 is examined, as a result of the Kruskal-Wallis H Test, the scores of the teachers in Factor 1 (H=7.112 p>.05), Factor 2 (H=4.399 p>.05), Factor 3 (H=4.487 p>.05), It was determined that there was no significant difference according to the variable of working time, and as a result, it was determined that there was no significant difference in teachers' perceptions of efficacy. As a result of the Kruskal-Wallis H Test, it was determined that there was no significant difference between the total scores of the teachers according to the variable of working time in the profession (H=3,170 p>.05). It was examined whether the teachers' perceptions of efficacy for the education of gifted students according to their working time in the profession changed for the total scores of the scale, and as a result, it was determined that there was no significant difference in the efficacy perceptions of the teachers.

Comparison of Teachers' Perceptions of Competence with Gifted Students According to Working Time

Comparison tests were conducted to determine whether the efficacy perceptions of teachers educatinggifted students differ according to the variable of working time with gifted students. The Kruskal-Wallis H Test, one of the non-parametric tests, was used to compare the efficacy perceptions of the teachers, since the data distribution was not normal. The statistics obtained as a result of the test are shown in Table 13.

Table 13. The Results of the Kruskal Wallis-H Test, Which is Compared According to the Working Time of the Teachers with the Gifted

	Working years with gifted	N	MeanRank	*df*	*H*	*p*	Beforonni Post-Hoc testi
FACTOR1	0-5 years	201	137,82	4	3,968	,410	
	6-10 years	51	155,19				
	11-15 years	18	131,19				
	16-20 years	10	164,40				
	21 years and over	3	188,33				
FACTOR2	0-5 years	201	133,93	4	14,113	,007	0-5 yıl/6-10 years 6-10 years/11-15 years
	6-10 years	51	175,81				
	11-15 years	18	124,89				
	16-20 years	10	139,85				
	21 years and over	3	217,83				
FAKTÖR3	0-5 years	201	141,38	4	6,193	,185	
	6-10 years	51	156,18				
	11-15 years	18	106,94				
	16-20 years	10	130,55				
	21 years and over	3	191,00				
TOPLAM	0-5 years	201	136,37	4	8,193	,085	
	6-10 years	51	166,14				
	11-15 years	18	121,86				
	16-20 years	10	150,50				
	21 years and over	3	201,67				

When Table 13 is examined, it has been determined whether there is a significant difference between the scores of the teachers' Factor 1 (H=3.968 p>.05) and Factor 3 (H=8,193 p>.05) as a result of the Kruskal-Wallis H Test, according to the variable of working time with gifted students. As a result, it was determined that there was no significant difference in teachers' perceptions of efficacy. In addition, it was determined that there was a significant difference between the Factor 2 scores of the teachers according to the variable of working time with gifted students (H=14,113 p<.05).The data were analyzed with the Kruskal-Wallis H Test, one of the non-parametric tests, in order to see whether the teachers' perceptions of proficiency in curriculum knowledge change according to the duration of educatinggifted students, and as a result, it was determined that there was a significant difference in teachers' efficacy perceptions. As a result of the Borferoni Post-hoc test performed to determine between which groups this difference is, between 0-5 years and 6-10 years; It has been determined that there is a significant difference in the efficacy perceptions of students between the

special talents between 6-10 years and 11-15 years and their working time. In terms of significant difference, the comparison between 0-5 years and 6-10 years is in favor of 6-10 years.

As seen in the table, when the mean rank is examined, it is seen that the mean rank for 6-10 years (S.O.= 175.81) is higher than the mean rank for 0-5 years (133.93). In terms of significant difference, the comparison between 6-10 years and 11-15 years is in favor of 6-10 years. As can be seen in the table, when the mean rank is examined, it is seen that the mean rank for 6-10 years (S.O.= 175.81) is higher than the mean rank for 11-15 years (124.89). It was determined that there was no significant difference for the total scores of the teachers according to the variable of working time with the gifted students (H=8,193 p>.05). According to the duration of educatinggifted students, it was examined whether teachers' perceptions of efficacy for the education of gifted students changed for the total scores of the scale, and as a result, it was determined that there was no significant difference in teachers' efficacy perceptions.

Discussion, Conclusion and Recommendations

In line with the research problems in the study, a scale consisting of "curriculum development knowledge", "applicability according to the student" and "assessment-evaluation knowledge" sub-dimensions and 35 items was developed in order to collect data on the perception of program efficacy of teachers educatinggifted students. As a result of the exploratory factor analysis, three factors explained 66.70% of the total variance in the entire scale. The Cronbach Alpha (α) reliability coefficient of the scale was calculated as .963 for the 1st dimension, .936 for the 2nd dimension, .935 for the 3rd dimension and .972 for the whole scale, and it was determined that the scale was highly reliable. Chi-square (x2= 2.985, sd= 550 ,p=0.00) value was found to be significant in the confirmatory factor analysis performed to confirm the three-factor structure of the scale. The fit index values were found as RMSEA= .072, NFI= .89, CFI= .92, IFI= .92, RFI= .90, GFI= .90, SRMR= .025. In the study, it was concluded that the scale developed to determine the efficacy perceptions of teachers educatinggifted students in the context of special curriculum development and to collect data in the research is reliable and that reliable data can be collected in this context.

The scale, which was developed for the perception of curriculum efficacy of the teachers of gifted students, was applied to a different group of teachers in order to collect data in line with the sub-problems of the research. It was observed that teachers' perceptions of efficacy in all three dimensions of the scale did not make a significant difference according to gender, age, branch and working time in the profession. However, when teachers' working time with gifted students is examined, there is no difference in their efficacy perceptions related to student relevance and measurement-evaluation dimensions, while there is a difference in favor of teachers who have worked between 6-10 years in the dimension of program efficacy perception.

It can be said that this situation is due to the fact that the teachers get used to the gifted in the first 5 years, they try to dominate the literature in the field of the gifted, and it covers the period of reaching a sufficient level in the context of practice. It can be said that teachers who have gained sufficient experience between 6-10 years can now be an indication that they can apply the knowledge and practices learned in the theoretical context about gifted people professionally and in a way that will make a difference. Therefore, teachers educatinggifted students need to have experience educatingthese students for a certain period of time in order to gain content knowledge proficiency.

According to Metin (1999), educatinggifted children is an interesting, exciting and enjoyable occupation, but teachers who will work with these children must have strong equipment in terms of their professional formations and have certain personality traits. The fact that gifted children are different from other children in terms of their interests, speed and depth of learning, and enrichment of teachers in curriculum planning, implementation and evaluation in the classroom environment, etc. requires some precautions. In this context, it is necessary to have a program development logic specific to the student or student group, focused on differentiation and enrichment by spending a certain time with these students and gaining experience in line with their needs. The opinions of Rogers (1989) about having professional experience for a certain period of time and accepting the results obtained from the experiences during this period as an important criterion in the selection of teachers who will train gifted children also differed in the change of the program efficacy perception dimension of this study according to the duration of study. This finding shows that this result is also supported in the context of the literature. Seeley (1998) conducted a study on the competencies of teachers educatinggifted students, with high cognitive teaching and inquiry; curriculum revision strategies; specific curriculum creation strategies; concluded that diagnostic methodological teaching skills and student counseling strategies were highly important. As can be seen among the factors that are important and make a difference, the items on curriculum development information are concentrated.

As a result, it is seen that the factors of age, branch, gender and working time of teachers educatinggifted students do not have much effect on teachers' perception of program proficiency, but they are an important factor on the dimension of program proficiency on the duration of educatinggifted students. It is thought that the scale, which measures the general curriculum efficacy perception of teachers who work with gifted students or who will be candidates to work, and which is more related to the education process, will have an important place in terms of national and international literature. A low score from the scale indicates that teachers' perceptions of curriculum efficacy can be improved, while a high score indicates that teachers' perceptions of curriculum efficacy will be sufficient. In this context, in line with the results obtained, it can be accepted as a status statement about teachers educatinggifted students and, if necessary, supportive trainer trainings can be given by the Ministry of National Education and relevant institutions.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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An Investigation of the Relationship Between Digital Literacy Levels of Social Studies Teacher Candidates and Their Attitudes Towards Distance Education

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Abstract

The relationship between the digital literacy levels of Social Studies teacher candidates and their attitudes towards distance education was investigated in this study. In addition, attitudes of teacher candidates towards distance education and their digital literacy levels were compared in terms of gender, year of education and income variables. The sample of this study, in which the general screening model was used, consisted of 260 social studies teacher candidates studying at state universities in the Central Anatolia Region of Turkey in the 2020-2021 academic year. "Digital Literacy Scale" developed by Bayrakçı (2020) and "Distance Education Attitude Scale" developed by Ağır (2007) were used in the data collection process. Kolmogorov-Smirnov normality test was run for data normality and after data normality was provided, regression and Pearson correlation analyzes, independent sample t-test, one-way ANOVA test and Post Hoc analysis were performed. The findings of the current study showed that the digital literacy levels of teacher candidates did not differ significantly depending on gender and grade levels, but the digital literacy levels of male teacher candidates were higher. It was observed that the attitudes of teacher candidates towards distance education significantly differed based on gender and year of education. It was determined that teacher candidates with high-income had a more positive attitude towards distance education and had higher levels of digital literacy compared to teacher candidates with low- and middle-income levels. The findings of the present study also showed that there was a positive and moderately significant relationship between digital literacy levels of teacher candidates and their attitudes towards distance education, and it was concluded that digital literacy levels of teacher candidates significantly predicted their attitude scores toward distance education.

Keywords: Teacher candidates, Digital literacy, Distance education, Attitudes

DOI: 10.29329/epasr.2022.248.11

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Introduction

With the official announcement of the first Covid case in Turkey, a number of measures have been taken in many areas from education to transportation, from working life to social life in order to control or reduce the spread of the epidemic (Balcı & Çetin, 2020). Within the scope of these measures, education and training were suspended at all educational levels. Considering that the disease will still continue to spread and that it will take a long time for vaccination and treatment studies, it has been decided to carry out education-training activities through distance education. Educational activities have continued remotely by establishing teacher-student interaction by using technological devices such as computers, tablets and phones to the extent that the current technological equipment of teachers and students allows.

Distance education is an interactive type of education eliminating the distance by means of information technologies, in which the teacher and the student or student group taking the course are physically in different environments. When the historical perspective of distance education is examined, it is seen that it has started with the aim of enabling individuals living in places where the traditional education cannot reach (Özbay, 2015). Today, some associate degree, undergraduate, graduate and certificate programs are offered through distance education by higher education institutions. In addition to these, various lessons and courses can be offered through distance education for every age group and every education level by different institutions and organizations. Distance education, which is the subject of this study, is the distance education that has been started compulsorily at all education levels due to the pandemic.

Educational technologies play an important role in maintaining the educational activities through online or offline environments under any extraordinary situations such as natural disaster or pandemic (Kurt & Doğan, 2020). Technology eliminates the distance between students and teachers, enabling students to access educational opportunities at any time and from anywhere (Beldarrain, 2006). Digital technology includes a wide variety of information processing tools and software such as mobile devices, web tools, applications, software, communication and storage services, etc. Digital technology has become an important part of education and has changed the learning methods of today's students. Students can use digital technology for learning activities such as reading and sending e-mails, accessing to learning management systems, reading e-magazines or e-books, taking online quizzes, participating in discussion forums, etc. (Tang & Chaw, 2016). However, technology alone is not sufficient in distance education; the most important thing is how the technology is used to organize and teach the lesson. The effectiveness of distance education depends on how teachers organize their lessons by taking advantage of technology (Toker Gökçe, 2008). In every situation in which educational activities take place such as formal or remote, online or offline, the teacher is still the teacher and the role of the teacher is basically the same. However, teachers must have learned to

integrate educational technologies into learning-teaching processes in this period, and they should have digital literacy skills that will enable them to conduct their lessons in a virtual environment (Kurt & Doğan, 2020, p.250). It is highly essential that teachers have high digital literacy and digital pedagogical competences. Only if teachers have high digital literacy and digital pedagogical competence, will they be able to organize the teaching environment by taking digital technologies into account (Aslan, 2021).

Digital literacy is one of the eight key competencies determined in line with the Turkish Qualifications Framework in the curriculum renewed in 2018. Regarding this competency, the following statements were included in the program: “It covers the safe and critical use of information communication technologies for business, daily life and communication. This competence is supported by basic skills such as access to information and the use of computers for evaluation, storage, production, presentation and exchange of information, as well as engaging in common networks and establishing communication via the Internet. (MoNE, 2018, p.5).

Digital literacy skills are the skills that teachers should have in order to use technology safely, creatively and critically both in their personal work and in their lessons. The term "digital skills" covers a range of different skills that make up the combination of behaviors, expertise, technical knowledge, work habits, character traits, disposition and critical understanding (UNESCO, 2017). Digital literacy should be understood as the fundamental skill or ability to use a computer safely and effectively. These skills include the use of:

- Office applications such as word processing, presentations and spreadsheets
- The Internet, including browsing, searching and creating content for the web, communication and collaboration via email, social networks, collaborative workspace, and discussion forums.
- Creative applications such as digital photography, video editing, sound editing (Royal Society, 2012, p.21)

Basic components of digital literacy are information literacy and digital communication skills. Information literacy includes understanding how information is stored and shared, and being able to read and understand digital texts efficiently and effectively; on the other hand, digital communication includes the ability to produce comprehensible text and content using digital programs, as well as using these tools to interact with others on digital platforms (Parks, 2012). The term digital literacy was first introduced by Paul Gilster (1997) as the ability to use information from various digital sources effectively and efficiently. Digital literacy can be expressed as the ability of individuals to use digital tools to search, find, evaluate, create and communicate information to make informed

decisions. According to Belshaw (2001), digital literacy is not only the ability to use digital resources, but also the ability to effectively think about information obtained from various multimedia sources (Lestari, Siskandar & Rahmawati, 2020).

The learning styles of younger generation, intertwined with technology since the day they were born and called "digital natives", and their expectations from learning, teachers, and teaching environments have also changed depending on technology (Kuru, 2019). The 21st century student needs educational opportunities that are not tied to time or place but still allow interaction with teachers and peers. Interaction in distance education, as in formal education, is considered as a necessary component for a successful learning experience (Beldarrain, 2006). Designing both face-to-face and online learning environments to increase student participation and motivation will positively affect students' perspectives on learning (Ergüleç & Eren, 2021). For this reason, it is important for teachers to be able to prepare and use digital materials, especially in distance education. Teachers must have digital literacy skills in order to meet the expectations and at the same time to provide the required interaction of the new generation in the field of education.

When the literature is reviewed, it is seen that many studies have been conducted to measure the digital skills of teachers and teacher candidates (Tyger, 2011; Kumari & D'Souza, 2016; Çam & Kıyıcı, 2017; Özerbaş & Kuralbayeva, 2018; Kuru, 2019; Hamutoğlu, Savaşçı & Sezen- Gültekin, 2019; Akgün & Akgün, 2020; Yazıcıoğlu, Yaylak & Genç, 2020; Lestari, Siskandar & Rahmawati, 2020). In addition, there were some studies in the literature examining the perceptions and attitudes of teacher candidates towards distance education (Kaleli Yılmaz & Güven, 2015; Yenilmez, Turğut & Balbağ, 2017; Hamutoğlu, Sezen-Gültekin & Savaşçı, 2019; Karatepe, Küçükgençay & Peker, 2020). However, there is no study examining the relationship between digital literacy and distance education perceptions in the literature. This study is important to fill this gap in the literature. Based on the observation that the efficiency of distance education, which started at all levels of education rapidly and compulsorily due to the pandemic, varied especially because of the digital competencies of teachers and students, this study aims to investigate the relationship between digital literacy levels of teacher candidates and their attitudes towards distance education. For this purpose, the answers of the following research questions were sought:

1. Is there a relationship between the digital literacy levels of social studies teacher candidates and their attitudes towards distance education?

2. Is there a statistically significant predictive power of digital literacy levels of social studies teacher candidates on their attitude towards distance education?

3. Do digital literacy levels of social studies teacher candidates differ depending on their gender, year of education and income level?

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4. Do the attitudes of social studies teacher candidates towards distance education differ depending on their gender, year of education, and income level?

Method

Research Model

This study, which examines the relationship between digital literacy levels of social studies teacher candidates and their attitudes towards distance education, is a quantitative study conducted as a correlational screening model. Screening models are research approaches that aim to describe a past or present situation as it exists (Karasar, 2005). Correlational screening model aims to determine the relationships between more than one variable and the level of their relationships (Creswell, 2003). This study examines whether there is a correlation between the digital literacy levels of social studies teacher candidates and their attitudes towards distance education. In addition, the current study aims to examine whether the levels of these two basic variables differ based on the gender, year of education and income level of social studies teacher candidates.

The Sample

The sample of this study consisted of 260 social studies teacher candidates who were selected by the easily accessible sampling method among the students studying at state universities in the Central Anatolia Region in the 2020-2021 academic year. The demographic characteristics of the social studies teacher candidates participating in the current study are as shown Table 1.

Table 1. Frequency and percentage distribution of the demographic characteristics of the participants

Variables	Categories	*f*	%
Gender	Male	84	32,3
	Female	176	67,7
Year of Education	1st	44	16,9
	2nd	64	24,6
	3rd	64	24,6
	4th	88	33,8
Income Level	Less than 2.000 TL	115	44,2
	2.000 TL - 4.000 TL	84	32,3
	4.000 TL - 6.000 TL	40	15,4
	Above 6.000 TL	21	8,1
Total		260	100,0

When Table 1 is examined, it is seen that 84 (32.3%) of the teacher candidates are male and 176 (67.7%) of them are female. According to the year of education variable, 44 (16.9%) of the participants are 1st year students, 64 (24.6%) of them are 2nd year, 64 (24.6%) of them are 3rd year, and

88 (33%) of them are 4th year students. According to the household income level, 115 of the participants (44.2%) have less than 2000 TL, 84 (32.3%) of the participants have between 2000 TL and 4000 TL, 40 (15.4%) of them have between 4000 TL and 6000 TL, 21 of them (8.1%) have 6000 TL and above household income.

Data Collection Tools

The data of the current study were collected with the Digital Literacy Scale developed by Bayrakcı (2020) and the Distance Education Attitude Scale developed by Güney (2007). The Digital Literacy Scale was prepared as a five-point Likert type consisting of 29 items, all of which were positive. The lowest score that can be obtained from the scale was 29 while the highest score was 145. The scale consisted of 6 sub-dimensions. There were 7 items in the ethics and responsibility sub-dimension, 6 items in the general knowledge and functional skills sub-dimension, 6 items in the daily use sub-dimension, 2 items in the professional production sub-dimension, 4 items in the privacy and security sub-dimension, and 4 items in the social sub-dimension. The Kaiser-Meyer-Olkin (KMO) fit value of the scale is 0.922; Bartlett test coefficient was found to be significant ($p < .005$). The Cronbach-Alpha internal consistency coefficient of the scale was calculated as 0.911. The CFA results of the scale showed that the fit indices of the 6-factor model were at an acceptable level ($\chi 2/sd = 4.3$; GFI = .91; AGFI = .90; CFI = .91; RMSEA = .05; RMR = .05; NFI = .89; IFI = .91).

The distance education attitude scale composed of a total of 21 items as five-point Likert type. While 14 of the items were positive, 7 of them were negative. The lowest score that can be obtained from the scale is 21 and the highest score is 105. The scale has 2 sub-dimensions: the advantages of distance education consisting of 14 items and the limitations of distance education consisting of 7 items. KMO coefficient of the scale was calculated as 0.814 and Bartlett test coefficient was found to be significant. The correlation coefficient calculated using the Spearman Brown formula for split half test reliability was found to be 0.799. Cronbach-Alpha reliability coefficient was calculated as 0.835.

Data Analysis

The data collected from the participants were first transferred to the SPSS package program, and the data of the participants who created extreme values due to missing or marking the same option for all scale items were excluded from the study. Before the analysis, kurtosis, skewness and Kolmogorov-Smirnov normality test values were checked to determine whether the data were normally distributed. These values are as shown in Table 2.

Table 2. Descriptive statistics, normality, and Levene's test values of the scales

Variables	n	$\bar{x}$	sd	Kurtosis	Skewness	Kolmogorov-Smirnov	Levene
Digital Literacy Scale	260	105,65	16,40	.305	-.286	.053	.239
Distance Education Attitude Scale	260	56,96	15,01	-.275	.242	.064	.766

As Table 2 shows, the skewness and kurtosis values of the scores obtained from each scale are between -1 and +1 and Kolmogorov-Smirnov test scores are also significant (p> .05). Accordingly, it can be said that digital literacy scale and distance education attitude scale scores are normally distributed. Since Levene's test values for testing the assumption of homogeneity of variances are [F (1,391) = 0,239, p> .05] for the digital literacy scale and [F (0,089) = 0,766, p> .05] for the distance education attitude scale, this assumption is met.

After determining the normal distribution of the data, regression and Pearson correlation analyzes were conducted to determine the relationships between digital literacy levels of the teacher candidates and their attitudes towards distance education. Independent sample t-test was performed to find out whether the teacher candidates' scores obtained from digital literacy scale and distance education attitude scale create a significant difference according to gender. One-way ANOVA tests were used to examine whether the scores had significant differences depending on year of education and income level. If the ANOVA test was found to be significant, Post Hoc analyzes were carried out to determine which groups significantly differed from others.

Findings

Is there a relationship between the digital literacy levels of social studies teacher candidates and their attitudes towards distance education?

The result of the correlational analysis conducted to answer the first research question and to determine whether there is a relationship between the digital literacy levels of social studies teacher candidates and their attitudes towards distance education are shown in Table 3.

Table 3. Pearson correlation analysis for the relationship between digital literacy levels of social studies teacher candidates and their attitudes towards distance education

Variables	n	$\bar{x}$	sd	r
Digital Literacy Scale	260	105,65	16,40	.475**
Distance Education Attitude Scale	260	56,96	15,01	

When Table 3 is examined, it can be seen that there is a positive, moderate (r = .475, p <.01), and significant relationship between the digital literacy levels of the teacher candidates and their attitude towards distance education.

Is there a statistically significant predictive power of digital literacy levels of social studies teacher candidates on their attitudes towards distance education?

To answer the second research question and to determine whether the digital literacy levels of prospective teachers have a statistically significant predictive role on their attitude towards distance education, regression analysis was conducted. Table 4 shows the results of regression analysis.

Table 4. Regression analysis results on the predictive role of digital literacy levels of social studies teacher candidates on their attitudes towards distance education

R	R^2	ΔR^2		B	Std. Error	β	t	p
.475	.226	.223	Constant	11,02	5,35	.475	2,05	.01
			Attitude Towards Distance Education	.435	.050		8,67	

When the regression analysis table is examined, it is seen that the digital literacy scores of teacher candidates significantly predicted their attitudes towards distance education (R = .475, R2 = .226, F = 75,227; P <.01). It can be said that 22% of the total variance of teacher candidates' attitudes towards distance education is explained by their digital literacy levels.

Do digital literacy levels of social studies teacher candidates differ depending on their gender, year of education and income level?

Independent sample t-test was used to determine whether digital literacy levels of social studies teacher candidates differ significantly according to their gender. Test results are shown in Table 5.

Table 5. Independent sample t-test for digital literacy levels of social studies teacher candidates according to their gender

Gender	n	$\bar{x}$	sd	df	t	p
Male	84	107,45	17,56	258	1,225	.22
Female	176	104,78	15,79			

As Table 5 shows, the digital literacy levels of social studies teacher candidates do not differ significantly according to their gender [$t_{(258)}$=1,225, p > .05]. Although there is no significant difference, it is seen that the digital literacy level of male teacher candidates ($\bar{X}$=107,45; sd=17,56) is higher than that of female teacher candidates ($\bar{X}$=104,78; sd=15,79).

Table 6 shows the results of one-way analysis of variance (ANOVA) conducted to determine whether the digital literacy levels of social studies teacher candidates differ significantly depending on year of education.

Table 6. One-way ANOVA results for digital literacy levels of social studies teacher candidates according to year of education

Year of Education	n	$\bar{x}$	sd	df	F	p
1st	44	103,68	17,70			
2nd	64	103,43	14,73	3	2,353	.07
3rd	64	104,07	18,05	256		
4th	88	109,38	15,21			

Looking at Table 6, it is seen that the digital literacy levels of teacher candidates do not differ significantly according to their year of education [$F_{(3\text{-}256)}$=2,353, p > .05]. In other words, digital literacy levels of social studies teacher candidates do not change significantly depending on their grade levels.

One-way analysis of variance (ANOVA) results conducted to determine whether the digital literacy levels of social studies teacher candidates differ significantly according to their income levels are as shown in Table 7.

Table 7. One-way ANOVA results for digital literacy levels of social studies teacher candidates according to income levels

Income Level	n	$\bar{x}$	sd	df	F	p	Post Hoc
Less than 2.000 TL	115	105,11	16,59				
2.000 TL - 4.000 TL	84	104,01	14,30	3	3,522	.01*	4>1
4.000 TL - 6.000 TL	40	104,92	18,90	256			4>2
Above 6.000 TL	21	116,52	15,20				

***p**<.05; Categories: Less than 2.000 TL=1, 2.000 TL – 4.000 TL=2, 4.000 TL – 6.000 TL=3, Above 6.000 TL=4

Table 7 shows that the digital literacy levels of social studies teacher candidates show a statistically significant difference according to their income levels [$F_{(3\text{-}256)}$=3,522, p < .05]. Post Hoc analysis revealed that the digital literacy levels of social studies teacher candidates having 6.000 TL and above income level ($\bar{X}$=116,52; sd=15,20) are significantly higher than that of teacher candidates having 2.000 TL and below income level ($\bar{X}$=105,11; sd=16,59) and teacher candidates having between 2.000 TL and 4.000 TL income level ($\bar{X}$=104,01; sd=14,30).

Do the attitudes of social studies teacher candidates towards distance education differ depending on their gender, year of education, and income level?

Independent sample t-test was run to determine whether the attitudes of social studies teacher candidates towards distance education differ significantly according to their gender. T-Test results are as shown in Table 8.

Table 8. Independent sample t-test for attitudes of social studies teacher candidates towards distance education according to their gender

Gender	n	$\bar{x}$	sd	df	t	p
Male	84	60,32	15,24	258	2,519	.01*
Female	176	55,35	14,67			

*p <.05

When Table 8 is examined, it is seen that the attitudes of social studies teacher candidates towards distance education show a statistically significant difference according to their gender [$t_{(258)}$=2,519, p < .05]. In other words, the attitude scores of male teacher candidates towards distance education ($\bar{X}$=60,32; sd=15,24) are higher than the attitude scores of female teacher candidates towards distance education ($\bar{X}$=55,35; sd=14,67).

Table 9 shows the results of one-way analysis of variance (ANOVA) conducted to determine whether the attitudes of social studies teacher candidates towards distance education differ significantly depending on year of education.

Table 9. One-way ANOVA results for the attitudes of social studies teacher candidates depending on their year of education

Year of Education	n	$\bar{x}$	sd	df	F	p	Post Hoc
1st	44	55,00	15,68	3	4,314	.005	4>3
2nd	64	56,54	14,98				
3rd	64	52,90	13,98	256			
4th	88	61,19	14,58				

***p**<.01; Categories: 1st =1, 2nd =2, 3rd =3, 4th =4

Looking at Table 9, it is seen that the attitudes of teacher candidates towards distance education differ statistically significantly according to their year of education [$F_{(3\text{-}256)}$=4,314, p < .01]. According to the Post Hoc test results, the attitude scores of the 4th year social studies teacher candidates towards distance education ($\bar{X}$=61,19; sd=14,58) are significantly higher than that of the attitude scores of 3rd year social studies teacher candidates ($\bar{X}$ = 52.90; sd = 13.98).

The results of one-way analysis of variance (ANOVA) conducted to determine whether the attitudes of social studies teacher candidates towards distance education differ significantly according to their income levels are shown as in Table 10.

Table 10. One-way ANOVA results for the attitudes of social studies teacher candidates according to their income levels

Income Level	n	$\bar{x}$	sd	df	F	p	Post Hoc
Less than 2.000 TL	115	54,16	13,56				
2.000 TL - 4.000 TL	84	55,53	13,09	3	8,960	.001*	4>1
4.000 TL - 6.000 TL	40	60,87	17,46	256			4>2
Above 6.000 TL	21	70,52	16,86				

***p**<.01; Categories: Less than 2.000 TL=1, 2.000 TL – 4.000 TL=2, 4.000 TL – 6.000 TL=3, Above 6.000 TL=4

When Table 10 is examined, it is seen that the attitudes of teacher candidates towards distance education differ statistically significantly according to their income levels [$F_{(3\text{-}256)}$=8,960, p < .01]. The Post Hoc test showed that the attitudes of teacher candidates having 6.000 TL and above income level ($\bar{X}$=70,52; sd=16,86) towards distance education are significantly higher than the attitudes of teacher candidates having 2.000 TL and below income level ($\bar{X}$=54,16; sd=13,56) and teacher candidates having between 2.000 TL and 4.000 TL income level ($\bar{X}$=55,53; sd=13,09).

Discussion, Conclusion and Recommendations

Advances in science and technology are changing the way we live and communicate, and new technologies require individuals to acquire new skills. The most important of these skills is digital competence, which is one of the eight key competences included in all curriculums renewed in 2018. Today, we can meet almost all our needs by using information and communication technologies. During the epidemic, education could be maintained thanks to information communication technologies. The efficiency of teaching through online courses has varied depending on the digital literacy levels of teachers, students, and parents.

This study, which aims to investigate the relationship between digital literacy levels of social studies teacher candidates and their attitudes towards distance education, first tried to determine the digital literacy levels of teacher candidates according to the variables of gender, year of education and income level. It was determined that the digital literacy levels of teacher candidates did not differ significantly based on their gender; however, the digital literacy level of male teacher candidates was higher than that of female teacher candidates. It can be said that this finding may be related to the fact that men are more interested in the internet and technology than women. The studies conducted by Yazıcıoğlu, Yaylak & Genç (2020) with pre-school and primary school teacher candidates and carried out by Sarıkaya (2019) with Turkish teacher candidates reached to the conclusion that digital literacy

levels do not differ significantly according to year of education and gender variables, which were in line with the findings of the current study. The previous studies conducted by Özerbaş and Kuralbayeva (2018), Yontar (2019), and Akgün and Akgün (2020) found that the digital literacy level of male teacher candidates is higher than that of female teacher candidates. It was determined in the study conducted by Vázquez-Cano et.al (2017) that men showed more competence than women in the process of searching for information online and in developing online presentations. Yau & Cheng (2012) stated that the high level of self-competency of male students in using technology is not an innate ability, but is related to the lack of the opportunities and environments created for women to use technology.

This study demonstrated that the digital literacy levels of teacher candidates did not show a significant difference depending on their year of education. This finding corresponds to the findings of the study conducted by Özerbaş & Kuralbayeva (2018). On the contrary, the study of Can, Çelik & Çelik (2020) with science teacher candidates revealed that the level of digital literacy increased as the education level progressed from the 1st year to the 4th year.

The present study showed that the digital literacy levels of teacher candidates differed statistically significantly based on their income. It was determined that high-income teacher candidates had higher digital literacy levels compared to teacher candidates with low- and middle-income levels. This situation can be explained by the technological opportunities that teacher candidates have. On the other hand, the master's thesis prepared by Kara (2021) showed no significant differences between the digital literacy levels of teacher candidates and their income status.

The current study also aimed to determine the attitudes of teacher candidates towards distance education based on the variables of gender, year of education and income level. The findings of the current study showed that the attitudes of teacher candidates towards distance education changed significantly based on the gender variable. It was observed that attitudes of male teacher candidates towards distance education were more positive than that of the female teacher candidates. Similarly, the studies conducted by Başar, Arslan, Günsel & Akpınar (2019), Boz (2019) and Yenilmez, Turğut & Balbağ, (2017) revealed that attitudes of male teacher candidates towards distance education were higher than female teacher candidates.

In addition to the previous findings, the current study demonstrated that the attitudes of teacher candidates towards distance education differed statistically significantly depending on their year of education, and it was also determined that the attitude scores of the 4th year teacher candidates were higher than the attitude scores of the 3rd year teacher candidates. Among the previous studies on attitude towards distance education, there is no study examining the year variable. Gökbulut (2021) focused on the effects of the age variable on the attitudes towards distance education and no

significant difference was found between the age of the participants and their attitudes towards distance education.

Another finding of the current study was that there were statistically significant differences in the attitudes of teacher candidates towards distance education depending on their income status. It was discovered that teacher candidates with high income had a more positive attitude towards distance education compared to teacher candidates with low- and middle-income levels. This situation can be associated with the economic opportunity to have the necessary technical material for distance education. In other words, the students who do not have required technical material may experience problems in their course participation, which, in turn, may cause them to have negative attitudes towards distance education.

Looking at the studies conducted in 2020-2021, it is seen that many studies concentrated on the perception of online learning, online education, and distance education. For example, according to the results of the survey conducted by the Higher Education Council (YÖK) on the efficiency of online education during the pandemic process, the proportion of students who stated that online education has a negative effect on learning was determined to be 52%. The proportion of students who stated that online education affects education life negatively was 52% while the proportion of students who stated that it affected education life positively was 31%. The majority of the instructors (74%) who participated in the survey conducted by the Higher Education Council (YÖK) on the efficiency of online education during the pandemic period stated that the online education process helped them develop new technological and pedagogical skills. On the other hand, the study conducted by Karadağ & Yücel (2020) concluded that there were problems arising from the management, teaching staff and the systems used in distance education at universities during the pandemic process, and for these reasons, the satisfaction level of students towards distance education was low. On a similar vein, university students of the study conducted by Bayram et al. (2019) emphasized the inadequacies of the infrastructure for distance education and the limitations such as the inability of distance education to provide the expected efficiency in some courses that require practice. Karakus et.al. (2020) concluded that Turkish teacher candidates could not adapt to the distance education process that started suddenly. The participants of the study thought that skill-based courses could not be carried out with distance education, and suggested that the courses should be face-to-face as soon as possible. According to Bozkurt (2020) and Erbaş (2021), the Covid-19 outbreak showed that both students and educators did not fully have the digital competencies and skills needed during emergency distance education. Although some institutions have implemented digital transformation in terms of infrastructure, the mental transformation of teachers and learners has not been actualized. For this reason, the results of the studies on the attitude towards distance education mostly reveal the inadequacies, deficiencies and negativities.

One of the main objectives of this study was to reveal the relationship between digital literacy skills and the attitudes towards distance education. The findings of the current study indicated that there was a positive and moderately significant relationship between the digital literacy levels of teacher candidates and their attitude scores towards distance education, and it was concluded that the digital literacy levels of teacher candidates predicted their distance education attitude scores in a statistically significant way. Accordingly, it can be said that when the digital literacy levels of teacher candidates increase, their attitude scores towards distance education also increase. Therefore, it can be claimed that the ability of teacher candidates to follow the lectures, to participate in the discussions held in the lessons, to upload the assignments and tasks require the use of digital skills in online or offline remote courses held during the pandemic process. In this case, it can be said that the academic achievement levels of the students in distance education will vary depending on their digital literacy skills. As the success level of the students increase, their attitude towards distance education will change in a positive way. In the thesis prepared by Boz (2019), it was seen that the teacher candidates who have a high level of self-efficacy in using information and communication technologies also had a high level of perception of distance education and it was stated that information and communication technologies usage self-efficacy was an important factor for the perception of distance education. Other studies that can be associated with the findings of this study were the studies of Yakar & Yakar (2021) and Akgün (2015). The study conducted by Yakar & Yakar (2021) which examined the relationship between the attitudes of students towards distance education and their readiness to e-learning pointed out that there was a moderate relationship between attitude towards distance education and e-learning readiness. Another conducted by Akgün (2015) reveled a low positive correlation between self-efficacy perceptions of the students towards online technologies and their attitudes towards web-based teaching. These findings correspond to the findings of the current study.

In the light of the results of this study, the following suggestions can be offered:

- Teacher candidates should be provided with the settings where they can develop their digital competencies.
- As the effectiveness of distance education may vary depending on the digital competencies of the instructors, in-service trainings should also be organized to improve their digital competencies.
- Weekly hours of the course on information and communication technologies can be increased so that teacher candidates can improve their digital literacy skills. Practices should be emphasized in these courses.
- It should be ensured that teacher candidates work on projects where they can use their digital literacy skills.

- The content of the instructional technologies and material design course in the undergraduate curriculum should be arranged in a way to improve students' digital literacy skills. It should be ensured that teacher candidates develop digital materials for their fields of study.

- More theoretical and practical studies on distance education and digital literacy and competencies may be included in the Teaching Principles and Methods course and other courses on field taught in the undergraduate curriculum.

- It may be recommended to offer elective courses related to digital literacy and distance education.

- The reasons for the negative attitude towards distance education should be investigated and necessary precautions should be taken.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Principal Authorized Teacher as a Management Form

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Abstract

The purpose of this study was to ascertain the attitudes of teachers who are authorized as principals about the concept of "principal authorized teacher." The snowball sampling method was used to enroll 40 principal authorized teachers for the study. They were requested to create metaphors for the concept of "principal authorized teacher" in the provided form to determine their mental thoughts and demographic data. Due to missing information and illegible writing in the gathered data, only 32 participants' data were examined. The analysis revealed that the metaphors indicated by the principal authorized teachers were classified as overworked, competent, self-sacrificing, working beyond their job duties, and other conceptual categories, respectively. When the suggestions are examined, it is necessary to reduce the workload of the principal authorized teachers. Thus, the principal can do the work of authorized teachers more effectively.

Keywords: Principal authorized teacher, primary school, metaphor

DOI: 10.29329/epasr.2022.248.12

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Introduction

According to the Ministry of National Education's Regulation on Educational Institutions Administrators, one of the classroom teachers is appointed as a principal authorized teacher at primary schools with a student population of 149 or less. The principal authorized teacher undertakes the duties, powers and responsibilities of the principal. The Principal Authorized Teacher is appointed to carry out the duties of principal and administrative services in addition to the duties of a classroom teacher in primary schools where there is no permanent principal staff, on the request of the Provincial/District Directorate of National Education and with the endorsement of the administrative chief. The Ministry of National Education defines a teacher authorized as the principal as "a teacher who provides administrative duties as well as teaching in primary schools without an independent directorate." In recognition of the way that principal authorized teachers, unlike regular teachers, execute a management task as a course, 12 hours per week during the semester and summer vacations, and 3 hours per week during the school year are viewed a management task, for which an additional course fee is paid in exchange for actual serving (MEB, 1999).

However, some studies outlined the problems experienced by principal authorized primary school teachers. For example, Tosun and Filiz (2017) stated that principal authorized teachers had major financial difficulties in schools. According to another study, the principal authorized teachers "accepted the duty since it is compulsory, regarded the principal authorized teacher concept as a problem for the system," and "primarily experienced challenges in administrative and educational affairs." (Kubanç & Şama, 2017). In addition to studies on identifying problems in the literature, there are studies on whether there is a difference in terms of different variables between principal authorized teachers and school principals. There was no significant relationship between leadership styles and job title in a study that looked into whether there is a significant relationship between the leadership styles of principal authorized teachers and school principals (Üstün & Çam, 2016). Nevertheless, none of these studies provides direct information about how principal authorized teachers evaluate their roles, and what their prominent concerns considering their dual duties. In this regard, this study aims to determine the difficulties of being principal authorized teachers by employing metaphors to be able generate mental thoughts about the concept. Metaphor, rather than being a language skill, is said to be a mental material and a means of understanding individuals (Lakoff & Johnson, 2005). Döş (2010) defined metaphors as the "union of our unconscious, daily life, and general communication tool" that aids in expressing thoughts. In scientific research, it has been noted that qualitative, quantitative, and both qualitative and quantitative studies on "metaphor" are carried out concurrently (Çoşkun, 2010). Morgan (1997) underlined that metaphors are a major approach to working within organizations as a complex social system, arguing that metaphor studies offer deep knowledge about organizational analysis.

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Method

Research Design

The study was organized according to the qualitative research method. It was carried out following the phenomenology pattern, one of the qualitative research methods. The phenomenological study defines the common understanding of numerous people's experiences of a phenomenon or concept (Creswell, 2013). Phenomenology is a sort of qualitative research that looks at the details of phenomena (such as an event, experience, or circumstance) that we come across in our lives but don't know plenty about or think about (Yıldırım & Şimşek, 2008).

Study Group

The snowball sampling method was chosen as the sample selection method in the study. The initial step in the snowball sampling method is to contact one of the study universe's units. The second unit is contacted with the assistance of the first unit, and the third unit is reached with the assistance of the second unit. In this way, the sample size expands like a snowball (Yazıcıoğlu & Erdoğan, 2004). In total, 40 principal authorized teachers were participated in the study, but, due to the incomplete data in some cases the data from 32 participants were included in the analysis process.

Table 1. Participant's Demographic Information

Bachelor's degree	Gender	Seniority		Total
		1-2	3-7	
		f (%)	f (%)	f (%)
Primary School Teaching	Female	7(21.875%)	4(%12.5)	11(34.375%)
	Male	10 (31.25%)	8(25%)	18(56.25%)
	Total	17(52.9%)	12(37.5%)	29(90.4%)
Other than Primary School Teaching	Female	-	1 (3.125%)	1 (3.125%)
	Male	-	2(6.25%)	2(6.25%)
	Total	0	3(9.15%)	3(9.15%)

Data Collection

The data were collected from principal authorized teacher using the written form. Of participants, 8 teachers were approached using technological tools, whereas 36 were reached via printed forms. Demographic questions were asked to learn which school the teachers work in, their responsibilities, seniority, and undergraduate graduation years. Besides that, they were asked to complete sentences of "the principal authorized teacher resembles …….. Because; ……". The data used in the research were obtained through such a standardized but free written form.

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Data Analysis

The metaphors chosen by the principal authorized teachers who took part in the study are listed with numbers. Metaphors were analyzed and classified based on their source and qualities, allowing for identifying common points. Frequencies and percentages were calculated for each classification.

Results

As a result of the research, five main categories were reached (Table 2).

Table 2. Frequency (f) and Percentage (%) Values of Categories Created from Metaphors Regarding the Concept of Principal Authorized Teacher

Category	Metaphors	Frequency *(f)*	Percentage *(%)*	Number of Metaphors
Extra Work	Being a spare tire (1), an effort for nothing (1), being something from everything (1), like catching lightning in a bottle (1), union (1), driving a truck with a class b license (1), sailing in the ocean (1)	7	21.87%	7
Compassion	Mom (4), dad (1)	5	15.62%	2
Authorized	Key (1), Superman (1), ship captain (1), deputy (1)	4	12.5%	4
Hard Worker	Tree (1), octopus (2), laborer (2) porter (1) honeybee (2), ant (1), fighter (1)	12	37.50%	7
Other	Heart (1), wall of patience (1), outdated person (1), living in purgatory (1)	4	12.5%	4
Total		32	100,0	24

We see that most metaphors were expressed by the participants in the “hard worker” category (f=12; % 37.5), as shown in Table 2. The metaphors produced in this category are tree, octopus, laborer, porter, honeybee, ant, fighter, and worker. In the category of “extra work,” metaphors of the spare tire, the effort for nothing, being something of everything, like catching lightning in a bottle, union, driving a truck with a Class B license(having to do unskilled work) and sailing in the ocean were used. Mother and father metaphors were featured in the “compassion” category, whereas key, Superman, ship captain, and deputy metaphors were used in the “authorized” category. The “other” category was developed to accommodate metaphors that did not fit into the other four categories. The metaphors (f=4;12,5 %) produced in the “Other” category are heart, wall of patience, outdated person and living in purgatory.

The identified categories, the metaphors included in these categories, and quotes from participants about the metaphors are discussed below.

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Category 1: Extra Work

When this category is analyzed, it is discovered that teachers regard the principal authorized teacher as someone who goes above and beyond their original responsibilities, and they create metaphors in this direction. The fact that these teachers had to complete several tasks outside of their own work was underlined as a common feature of these metaphors, and thus a category was formed in this respect. When Table 2 is examined, it is seen that 7 metaphors representing this category are produced as a spare tire, the effort for nothing, being something of everything, like catching lightning in a bottle, union, driving a truck with a Class B license, and sailing in the ocean. These metaphors were created by 7 people, with a ratio of 21,87% for all metaphors. Examples of these metaphors are given below:

A principal authorized teacher is similar to a spare tire. Because there is no original tire, and the vehicle has to go. **(C.1)**

The principal authorized teacher is similar to being something of everything. Because we are teachers at the same time, we are responsible for the lessons and the students. We are both school principals, and hence, we deal with administrative affairs. We are in charge of the school's cleaning as well as the other staff. So we take some responsibility for everything to some extent. In fact, we become a little bit of everything, but not a whole thing. **(C.3)**

Principal authorized teacher in a school resembles a union set, or it would be more metaphorical to say a similar, falcon-looking hawk (common expression in Turkish to say downgraded). Because in a big school, there is a principal, vice-principal, teacher and janitor. In a way, principal authorized teachers become all of them. They occasionally look after the school's paperwork and administration on behalf of the entire school. And also they teach. Sometimes they even do cleaning and heavy work as a janitor. But it is not enough. This responsibility encompasses all professions, and it is expected that all of them be performed to the best of one's ability. **(C.5)**

The principal authorized teacher is actually someone who is driving a truck with a Class B license. Because giving a truck to someone with a Class B license will almost certainly result in serious setbacks and negative consequences. No matter how much a person gives and tries to drive this vehicle, he or she will be unsuccessful and unappreciated. **(C.6)**

Based on the participants' responses, it is believed that principal authorized teachers are confronted with circumstances they have never encountered before, and they are responsible for various tasks outside of their profession.

Category 2: Compassion

When this category is analyzed, it is discovered that teachers regard the principal authorized teacher as someone compassionate, and they create metaphors in this direction. Because these produced metaphors had a common quality of compassion, a category was formed in this manner. When looking at Table 2, we see two metaphors for this category: mother and father. These metaphors were created by 5 people, with a ratio of 15,62% for all metaphors. It was observed that the mother's metaphor was repeated by 4 people, whereas the father's metaphor was stated by 1. Examples of these metaphors are given below:

The principal authorized teacher is like a mother and a housewife. Even though you do all your work, but it still doesn't end. You never know what will happen when. Just when you think everything is done, you have to run another errand. It doesn't matter where or how you are. The important thing is to do it. **(C.9)**

A principal authorized teacher is similar to a mother. Because she delivers guidance that has a lasting impact on people's lives each day, she creates favorable settings for their children's future success. The mother undertakes the role of a manager in the family and also deals with housework. She is concerned with the protection and care of her children. The principal authorized teacher, like the mother, is responsible for the care and education of kids at school, as well as the planning and implementation of school projects and the cleanliness and maintenance of the school. **(C.11)**

A principal authorized teacher is similar to a mother. Because a mother is responsible for all the work at home. Our mothers, for example, are in charge of housework and cooking. In addition to these responsibilities, they provide their children with their first education with the assistance of their spouses. The principal authorized teacher, just like a mother, is in charge of the school's administrative affairs, management, cleaning, and the students' education and teaching. **(C.12)**

When the above participant statements are considered, it is believed that the principal authorized teachers are compassionate persons who perform numerous jobs while sacrificing much more.

Category 3: Authorized

When this category is analyzed, it is discovered that teachers regard the principal authorized teacher as someone who has authority, and they create metaphors in this direction. Because these produced metaphors had a common quality of authorized, a category was formed in this manner. Looking at Table 2, it is seen that 4 metaphors representing this category are produced as key, Superman, ship captain and deputy. These metaphors were created by 4 people, with a ratio of 12,5% for all metaphors. Examples of these metaphors are given below:

A principal authorized teacher is similar to a key. Because whoever is given the key, in other words, which teacher becomes the principal authorized, has the right to open the door. Maybe that person doesn't own the house that key belongs to. Those teachers may not be permanent principals, but if they have the authority, which is the key here, they have the right to do their duties as a principal. In short, whoever has the key, that person opens the door. Even if the person is principal authorized, a teacher acts as a principal with signature authority. **(C.13)**

A principal authorized teacher resembles a superhero. It is also known as a teacher-hero among the people. Because at the start of the year, the principal authorized teacher is a painter, plasterer, bricklayer, and plumber. This teacher also has titles like principal, primary school teacher, cleaner, guard, sanitation worker, and guard throughout the school year. While his or her colleagues try to implement a single annual plan, these teachers implement 4 of them. Even they also can stop a train! And can jump from the tallest buildings! **(C.14)**

A principal authorized teacher resembles a captain of the ship. Because they attempt to transfer passengers to other ports across the wide oceans, they carry individuals to their chosen location without deviating from the planned route. The principal authorized teacher is the captain of this ship. The arrival of the ship on land also symbolizes the students' first steps into life. **(C.15)**

A principal authorized teacher resembles a deputy. Because the deputy has the right to exercise authority on behalf of the people. He or she performs the duties that the nation is obligated to perform on its behalf. **(C.16)**

When the above participant statements are considered, it is considered that principal authorized teachers are authorized persons who carry out the duties for which they are responsible.

Category 4: Hard Worker

When this category is analyzed, it is discovered that teachers regard the principal authorized teacher as hard-working individuals, and they create metaphors in this direction. Because these produced metaphors had a common quality of hard worker, a category was formed in this manner. When Table 2 is examined, we see that 8 metaphors representing this category are produced as a tree, octopus, laborer, porter, honey bee, ant, fighter and worker. These metaphors were created by 12 people, with a ratio of 37,5% for all metaphors. It was discovered that the worker metaphor was used by 3 persons, whereas 2 people established the octopus and honey bee metaphors. Examples of these metaphors are given below:

A principal authorized teacher is similar to a confused laborer. Because you must teach, produce documentation for National Education, report to the inspector, and perform all tasks as if you were a laborer. You're on the roof sometimes, painting other times, chasing goats, fixing garden

wires, sweeping the classroom, or dealing with broken equipment... These times are actually a lot, and in short, you involve in everything. **(C.23)**

A principal authorized teacher is similar to an octopus. Because an octopus is a sea creature with more than two arms, as is well known. Each arm undertakes separate tasks at the same time. The principal authorized teacher has to carry out multiple tasks at the same time. In addition to teaching, you have to be a manager, assistant principal, health care worker, guide, repairman, parents… ***(C.18)***

A principal authorized teacher is like a honey bee. Because the honey bee must discern between right and wrong in order to collect honey from the mountains. It needs to take honey from the correct flowers and choose the right one. The principal authorized teacher must make the best and most appropriate decisions for both the school and the students, and he or she must be hard-working. ***(C.24)***

A principal authorized teacher is like an ant. Because the principal authorized teacher is busy with all kinds of work of the school. ***(C.26)***

A principal authorized teacher resembles workers in China. Because these teachers do all kinds of work. They, like Chinese workers, take care of all of the problems at the large school on their own and accept them without reacting to the situation. ***(C.27)***

Based on the participants' responses, it is considered that principal authorized teachers are hard-working individuals who must manage multiple tasks simultaneously.

Category 5: Other

When this category is examined, it is seen that teachers working as principal authorized teachers have developed different metaphors regarding this concept. A distinct category was formed because the common element of these generated metaphors could not be determined, and also they could not be included in other categories. When Table 2 is examined, 4 metaphors for this category are produced: the heart, the wall of patience, the outdated person, and living in purgatory. These metaphors were created by 4 people, with a ratio of 12,5% for all metaphors. Examples of these metaphors are given below:

A principal authorized teacher is like a heart. A person's heart must beat in order for him to live, and the heart must pump blood throughout the body. On the other hand, being a principal authorized teacher pumps blood into the future to raise the generations in the rural areas and villages. Principal authority is vital for education and teaching. **(C.29)**

A principal authorized teacher is like a wall of patience. Because, due to job title, these teachers deal with many things and deals with many issues. Will you deal with the villagers or the transport drivers, for instance, putting schoolwork aside? Or are you going to deal with parents who say things like, "Why did you give my child an aid package?" when they arrive; you decide now. As a result, the principal authorized teacher should carefully control the strength of patience and prevent cracking the patience wall. **(C.30)**

A principal authorized teacher resembles an antisocial, outdated person. Because you are always alone. And you can't find anyone to talk to. The roads are usually closed due to snow. You may well be exposed to situations in which there are power outages, telephone networks go down, and internet connections go down, resulting in weeks of communication breakdown. In this case, it is not possible to follow the agenda. You live in darkness to the rest of the world. That's why you have to live an antisocial life. **(C.31)**

A principal authorized teacher is similar to be living in purgatory. Because you cannot comfortably be a teacher or the principal of your school. **(C.32)**

Although statements are suggesting that principal-authorized teachers feel uncertain, it can be assumed that they have strong and unfavorable perceptions about their career as both administrators and teachers based on the participants' statements mentioned above.

Discussion and Conclusion

While some studies focused on the difficulties and problems encountered by principal authorized teachers, this research is important in terms of determining the mental ideas of principal authorized teachers regarding this concept. Although qualitative data cannot be generalized due to its nature, teachers' opinions actively take on this responsibility, and effort are extremely significant.

The perception that the principal authorized teaching extra work to their duty is one of the study's discoveries. Principals who serve as principal authorized teachers claim to be in a different profession. Although Keser Özmantar and Civelek (2017) used negative expressions to criticize the notion of a principal authorized teacher, they claimed that management and teaching are two different jobs and that such a responsibility should not be assigned to inexperienced teachers without managerial formation.

One of this study's findings is the perception that the principal authorized teaching is hard work. Accordingly, the principal authorized teachers have to work hard. According to Kubanç and Şama (2017), principal authorized teachers experienced some difficulties keep up to work hard; hence, their workload should be lessened. Furthermore, Karayel (2017) claimed that problems such as inefficiency, culture clash, managerial issues, housekeeping, internet, transportation, food, and

communication occur in the school where principal authorized teachers work. The principal authorized teachers are responsible for resolving these issues. As a result, the perception is established that principal authorized teachers work hard.

Another finding is the perception that the principal-authorized teachers are authorized. Although the perception about principal authorized teachers having authority was formed in this study, Kubanç and Ama (2017) revealed that these teachers accept this duty because it is mandatory, and they see the profession of the principal authorized teacher as a problem for the Turkish education system, with the majority of their problems occurring in administrative and educational areas. While it is clear that principal authorized teachers have the greatest difficulty preparing official documents in administrative matters, they have the most problems in lesson preparation in education and teaching affairs.

This study also revealed that the principal authorized teacher is compassionate. It means that, in addition to their primary responsibilities, principal authorized teachers also teach, and throughout this teaching practice, they are being perceived as a mother and father figure. In their study, Köse and Demir (2014) found that students look up to teachers who are open to conversation, have strong communication skills, and take them as role models.

Recommendation

The results of the study are consistent with those of other studies published in the literature. In the case, this study also confirmed that it is necessary to reduce the workload of principal authorized teachers. Thus, the principal-authorized teachers can do their jobs more effectively. Furthermore, because principal authorized teachers are concerned about the difficulties at school, they take responsibility beyond their roles. In this perspective, role confusion can be experienced by principal-authorized teachers. Therefore, it is important to motivate principal-authorized teachers more in order to reduce the high tempo and role confusion. Principal-authorized teachers can be entitled to motivation-boosting initiatives such as additional premiums.

In addition, the limitations of qualitative research are valid in this study. Researchers may be advised to conduct in-depth studies with other qualitative research data collection tools. According to the results of the study, principal authorized teachers experience role confusion. This means that both the educational process and the school administration cannot be qualified. The Ministry of National Education should abandon this policy as much as possible.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Qualitative Research in Social Sciences: A Research Profiling Study

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Abstract

The principal objective of this study was to profile qualitative research in social sciences through a comprehensive examination of 10,637 documents. An analysis on how scholars from central/peripheral countries included in the qualitative research citations/publications is presented. Central/peripheral distinction is used to determine the trends in the globalization of qualitative research. With the comprehensive examination, this paper will shed light on the discussion of the patterns of globalization in qualitative research. Science mapping technique among bibliometric methods was employed. This paper is based on studies that published in journals that use the English word/term "qualitative" in their titles. The data for this study encompassed 10,637 documents published between 1995 and 2019 by 16,884 authors. Our findings reveal that qualitative research continue to be mostly North America- and Europe-centered initiatives. A similar situation is also observed for the most cited publications and the affiliated institutes of their authors. The studies focus primarily on the individuals' self and social experiences, social psychology, and their knowledge, attitude, and behaviors in education. The most cited publications and the institutions with the highest number of publications are all North America- and Europe-centered. Another finding is that six of every 10 qualitative research are about medical sciences.

Keywords: Qualitative research community, science mapping, bibliometric analysis, qualitative research field

DOI: 10.29329/epasr.2022.248.13

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Introduction

Qualitative research relies on analyzing and interpreting social experiences and concepts in their own context (Glesne, 1999). Using this approach, researchers and practitioners endeavor to comprehend, describe, interpret, and develop innovative ideas about a context (Creswell, 2009). The realistic nature of qualitative research loads the scholars who conduct qualitative research in diversified societies and cultures across the world with the task of transforming qualitative research into an approach suitable for understanding a particular culture, in addition to the purpose of understanding and interpreting practices pertinent to that culture.

Qualitative research aims to discover and describe how they behave and how they make sense of what they do. It can be said that throughout the history, it has always been searched for this kind of knowledge. "Understanding" and "interpreting" within the framework of a scientific research is a relatively up-to-date attempt. Beginning with the 19th century, the search for scientific knowledge about human and society has notably intensified. In the decades following the long and successful story of science nature and physics, at the end of the 19th century, sociology and anthropology surfaced with the claim of studying societies and cultures by means of scientific methods. Comte aimed to discover the basic laws of society, just the way in physics, by propounding the distinction between social dynamics and social static (Coser, 1971). Just after Comte, Dilthey argued that society and nature could be studied in two different ways. Dilthey's separation of natural sciences and social sciences or humanities can be marked as a new beginning for qualitative research. Dilthey influenced Weber, Simmel, Husserl, and Heidegger by hypothesizing that humanities focus on actions and meanings in everyday life. The initiative that commenced by the end of the 19th century has certain characteristics, namely definition of social sciences, social scientists as observers, research objects, research text, readership, and philosophy (Erickson, 2018).

This departure can also be deemed as the beginning of the period called the Golden Age, according to some authors (Erickson, 2018). The Golden age, which lasted roughly until the 1950s, was effectuated with the "social sciences" initiative, the search for "objective" observations by social scientists just like scientists, with cultures and people as the "objects of research," with research reports independent of the perspectives and contributions of the "researched objects" characterized by presenting these reports not to "research objects," but to a scientific community, and by the scientist worldview whose knowledge and prediction about the process and result is higher and more qualified than the object being researched (Erickson, 2018). This period can be regarded as the period when social sciences were implemented by a positivist philosophy of science.

Denzin and Lincoln (2018) divided this history into particular historical moments and asserted that the development of qualitative research has at least eight different moments. These moments are The Traditional Period (1900–1950), The Modernist and Golden Phases (1950–1970), Blurred Genres

(1970–1980), Paradigm Wars (1980–1985), The Crisis of Representation (1986–1990), The Postmodern Period (1990–1995), Postexperimental inquiry (1995–2000), The Methodologically Contested Present (2000–2004), Increase in Paradigm (2005–2010), The Fractured Posthumanist Period fighting the accountability-oriented business academy (2010–2015), The Uncertain Utopian Future Period in which critical inquiry finds its response in the public space (2016–).

Erickson (2018) asserted that the period that started with the Golden Age has received some criticism in the following periods. The fact that two ethnographers, namely Robert Redfield and Oscar Lewis reached two absolutely different conclusions about the same village (Mexico City, Tepoztlan) 17 years apart, had reinforced the uncertainty concerning the role of the researcher, data, and power relations. Likewise, Father Baldwin, who went to Boyowa after Malinowski, demonstrated that qualitative research cannot be implemented independent of power relations, the role of the researcher, and the research process. It has become more frequently asked whether the researcher is a colonialist, imperialist, an outsider or not. Such denunciations have brought the qualitative research approach closer to its current form. Recently, the debate on whether qualitative research is a global initiative has been added to these criticisms. These condemnations argue against the conceptualization that qualitative research should be a globally managed single-center method, with a single history and a single method.

The Current Scene

Qualitative researchers are no longer a community specific to a particular region of the world. Numerous scholars around the globe search for understanding in a multitude of social science disciplines. It can be argued that qualitative research have become global. However, it remains unclear what is the extent of this globalization and how much do scientific communities, journals, scientific groups, collaborations include international/global scholars.

Scholars from different disciplines and countries (Alasuutari, 2004; Flick, 2014; Chen, 2016; Gobo, 2011; Hsiung, 2012) disagreed with periodizations based on a specific scientific community as Denzin and Lincoln (2018) postulated. For them, it is not possible to delimit and classify qualitative research locally, regionally, or by a single approach. Regarding periodization, Alasuutari (2004, pp.599-600) and Seale et al. (2007) were skeptical and argued that it developed its own narration. Similarly, according to Flick (2014), such a periodization excludes different experiences at a global level. Flick (2014), in this study about interview techniques, hermeneutics, and narrative research in the 1980s, stated that a few original theories and approaches have been developed in Germany that do not rely on the Anglo-American tradition. However, the outcomes of these developments are hardly recognized in the mainstream discussion and literature of qualitative research (Flick, 2014). Chen (2016) stated that qualitative research is not a “Western patented” method, providing the example that

approaches which are the basis of qualitative research such as interpretation and holistic assessment, already exist in traditional Chinese culture and civilization.

Smith (1999), in her study that garnered the attention of various scholars on local cultures, theorized that the research concept has an imperialist and a colonialist implication. Gobo (2011) argued that not just the research, but also the instruments such as interviews, focus group interviews, and questionnaires entail cultural elements, and these are not culture-independent techniques. A similar argument was posited by Weaver (2011) while he was in Russia to conduct an investigation on religious conversion. He cogently stated that the invited people did not participate in the study because they did not trust him and suspected him of being an agent. The studies carried out by Kawaba and Gastaldo (2015) and Flick and Röhnsch (2014) collectively demonstrated beyond any plausible doubt that the view that there is only one form of qualitative research and the assumptions adopted by all should be re-evaluated in the context of local cultures. Furthermore, in response to a question about interaction with local cultures, Hsiung (2012) argued that the development of qualitative methodology persists to be western-centered and, in this respect, countries, and researchers are divided as central and peripheral. Center countries are that have developed research capacities located at Europe (UK, France, Germany) and North America (USA, Canada). Peripheral countries are characterized by their less developed research capacities and located at the rest of the world (China, Russia, Egypt, Argentina) (Hsiung, 2012; Mosbah-Natanson & Gingras, 2014). In addition, she remarked that the qualitative research in the countries called peripheral countries (India, Ireland, Israel, Italy, Japan, Mexico, New Zealand, Poland, Southern and Eastern Africa, Spain, and South Korea) started in the 1990s. During the same period, translations of Anglo-American methodology studies also began. These translations explain what qualitative research is and what it ought to be. With all the presumptions made by a number of scholars (Smith, 1999; Gobo, 2011; Weaver, 2011; Kawaba & Gastaldo, 2015; Flick & Röhnsch, 2014; Hsiung, 2012), it is a reasonable question qualitative inquiry's global endeavor.

Notwithstanding the fact that Denzin (2014) asserted that qualitative research is always global and already a local method, arguments put forward by Hsiung (2012, 2015) that the same is not yet proven by publications and statistics, keep fresh the questions that qualitative research is a western-centered enterprise today. Hsiung's claims are corroborated by a number of scholars. Instances such as Alasuutari's (2004) claim that Baudrillard felt the need to strategically write in English language and about America, Charmaz's (2014) study on international researchers revealed that a Swedish researcher felt obliged to think in English language, Alasuutari (2004) being warned by the publishing house, indicate that we are addressing an Anglo-Saxon jury. The arguments posited by Smith (1999), Weaver (2011), and Gobo (2011) raise new questions about how much the claim that qualitative research is globalized was recognized. Although their arguments are convincing, a critical shortcoming of the above-mentioned studies is that they are not supported by evidential data. For

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instance, Alasuutari (2004) presented his first-hand experiences and singular examples. Moreover, his judgment is largely based on the review of the SAGE publishing house's publication catalog. Likewise, Hsiung (2012, 2015) used singular examples when making attention-grabbing arguments or classifying countries as central and peripheral. Studies conducted by Flick and Röhnsch (2014), Gobo (2011), Weaver (2011), Chen (2011), Kawaba and Gastaldo (2015) did not demonstrate any exception in this regard.

As summarised above, qualitative research become a globally accepted way of research. Paper at hand is unique in terms of problematizing the pattern of globalization trends of qualitative inquiry. By doing that it will be possible to argue the positions of researchers as well as institutions. In this way, the central / peripheral situation of qualitative research in the world has been tried to be critically addressed with the data obtained.

Aim

This paper presents a picture of how scholars from peripheral countries are included in the qualitative publications/citations. To present a more holistic picture, an analysis was also conducted regarding in which disciplines, qualitative research is commonly used and how many studies have been published annually. A total of 10,637 documents by 16,884 authors were analyzed. We intend to demonstrate if qualitative research can prospectively become an extensively used method on a global scale. While doing so, qualitative researchers, publications, and the themes studied heretofore were analyzed in a historical period. The principal objectives of this study were three-fold: (1) to explore the multifaceted perspectives of qualitative research, (2) to embrace non-Western ways of accessing knowledge, and (3) to show how promises to reject a dichotomous and exclusionary approach to science are being recognized.

The ultimate aim of this study was to profile the qualitative research in social sciences through the analysis of 10,637 documents.

The sub-questions are as follows:

1. What are the publication, citation, and network profiles of countries and institutions?

2. What are the citation and network profiles of journals, authors, and publications?

3. What are topic/term profiles?

Method

It is known that when a research field reaches a certain level of maturity, scholars direct their attention to this newly formed literature (Aria et al., 2020). Denzin and Lincoln (2018) emphasized that while qualitative research has reached a certain level of maturity, the distinction between

qualitative/quantitative paradigms is rather getting blurred. In order to present the qualitative research literature, research profiling method was performed Porter et al. (2002, p.352). Porter et al. (2002, 352) stated, "most development pertinent to research profiling falls under the term bibliometrics." At this point, some concepts associated with research profiling and their relationship to this research context should be clarified.

Bibliometric methods are used to analyze physical units of scientific publications and citations (Broadus, 1987). Bibliometry provides both basic and advanced analyses of large volumes of documents and also enables more objective and reliable analyses that rely on data (Diodato & Gellatly, 2013). In addition to the positive aspects of bibliometry, it is useful to keep in mind some of its negatives as limitations, such as (1) it is based on metrics, so it cannot decide what is in good quality, and (2) playing with metrics misdirect the researchers. Scientific mapping is a technique that reveals the structural and dynamic aspects of the rapidly changing scientific information system. A scientific mapping analysis typically comprises data retrieval, pre-processing, network extraction, normalization, mapping, analysis, and visualization stages (Cobo et al., 2011).

In terms of working processes of bibliometric algorithms, concepts such as bibliographic coupling, co-citation coupling, co-word analysis, co-occurrence network should also be expressed. Bibliographic coupling – a single reference element such as title, author, journal number etc. used by two articles is defined as a coupling unit between them (Kessler, 1963). Co-citation coupling is the frequency at which two documents are cited together (Small, 1973). "The intellectual structure can be deduced from the co-citation networks, considering both the bibliographic coupling and the co-citation coupling as alternative criteria for building the relationships" (Aria et al., 2020, p.806). Conceptual structure can be mapped with co-word networks. Basically, co-word analysis is based on the idea that "the co-occurrence of key words describes the contents of the documents in a file" (Callon et al., 1991, p.160).

With the latest advances in text mining and citation analysis tools, a more in-depth and comprehensive analysis is now possible (Van Eck & Waltman, 2017). However, research profiling recommends combining the data obtained from any database by analyzing the same with any tool, rather than tracing some of the basic information. In this way, it is argued that a "knowledge from a body of literature" Porter et al. (2002, p.352) should be produced regarding the whole picture.

Various instruments such as VOSviewer, BibExcel, CiteSpace, and Tableau are used in scientific mapping (Van Eck & Waltman, 2010; Chen, 2006; Persson et al., 2009). The bibliometrix package software (Aria & Cuccurollu, 2017) developed on R programming language offers comprehensive analysis and visualizations. In this study, the Bibliometrix package software developed on R programming language was used for processing, analysis, and visualization of data. General information about the data, accessing, and sorting methods are explicated below.

Data obtained through science mapping enabled us to perform an in-depth analysis of the current situation. In this regard, in addition to the most frequently studied topics in the qualitative research literature and changes in trending topics over time, a picture of the current situation including the number of publications produced by a given author, institution, and country, citations they received, and collaborations were presented. At first, how data were retrieved, how data were prepared for analysis, and general information about the data depicted in Figure 1.

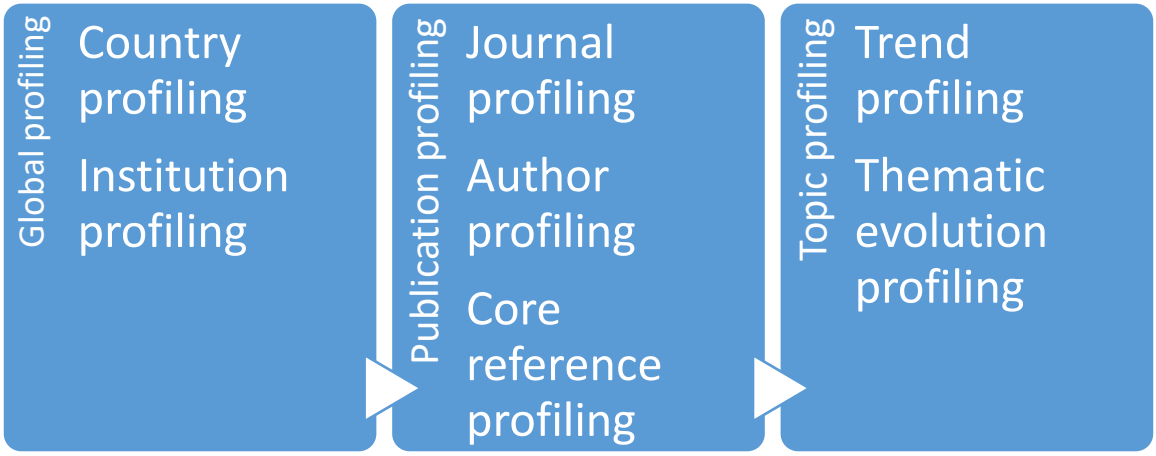

Figure 1. Phases in the Research Profiling and Mapping Process

Data Retrieval and Selection Stages

Phase One:

The aim of this study was to profile the qualitative research in social sciences through the analysis of 10,637 documents. While doing so, the Web of Science (WoS) database was utilized as it includes most studies in social sciences (Falagas et al., 2008). A list of journals that are indexed in the WoS database and in the Social Sciences Citation Index (SSCI) was obtained. Subsequent to that, as of May 30, 2020, a list of journals indexed in the SSCI that include the term "qualitative" in their title was obtained on the WoS Master Journal List page. This journal list is enumerated in Table 1.

Table 1. The List of Journals Indexed in The SSCI that Include the Term "Qualitative" in their Title

No.	Journal Name	ISSN/e-ISSN	Subject Categories
1	International Journal of Qualitative Methods	1609-4069	Social Sciences, Interdisciplinary | Sociology and Social sciences | Social Sciences, General
2	International Journal of Qualitative Studies on	1748-2623 /	Social Sciences, General | Public, Environmental and Occupational Health | Nursing | Social Sciences,

	Health and Well-Being	1748-2631		Biomedical | Public Health and Health Care Science
3	Qualitative Health Research	1049-7323 1552-7557	/	Public, Environmental and Occupational Health | Information Science and Library Science | Social Sciences, General | Social Sciences, Biomedical | Social sciences, Interdisciplinary | Public Health and Health Care Science
4	Qualitative Inquiry	1077-8004 1552-7565	/	Social Sciences, General | Social Sciences, Interdisciplinary | Sociology and Social Sciences
5	Qualitative Research	1468-7941 1741-3109	/	Social Sciences, Interdisciplinary | Sociology and Social Sciences | Social Sciences, General | Sociology
6	Qualitative Research in Accounting and Management	1176-6093 1758-7654	/	Management | Business, Finance | Economics and Business
7	Qualitative Research in Psychology	1478-0887 1478-0895	/	Psychiatry/Psychology | Psychology, Multidisciplinary | Psychology
8	Qualitative Social Work	1473-3250 1741-3117	/	Social Work and Social Policy | Social Work | Social Sciences, General
9	Qualitative Sociology	0162-0436 1573-7837	/	Sociology | Sociology and Social Sciences | Social Sciences, General

As seen in Table 1, a total of nine journals were selected on the basis of the predetermined criteria. Each of these journals was accessed through the WoS database, and data including documents were downloaded in a suitable format and prepared for further rigorous examination. It was observed that in addition to social sciences, some of these journals cover multidisciplinary categories such as sociology, psychology, management, and health.

Phase Two:

In accordance with the preferred purpose in the selection of journals, (a) indexing by WoS database, (b) publishing studies on social sciences (c) including the term "Qualitative" in the title were used as exclusion criteria. Subsequent to obtaining the journal list, without limiting any discipline or keyword, records concerning each of these journals were searched, and the acquired results were collected in a "plain text" format. The general information regarding the obtained data set is succinctly presented in Table 2.

Table 2. General Information About the Data Set

Timespan	1995–2019 (24 years)
Documents	10,637
Documents per year	443.20
Authors	16,884
Single-authored documents	3,092
Authors of single-authored documents	3,092

Authors of multi-authored documents	13,792
Author appearances	25,649
Documents per author	0.63
Authors per document	1.59
Co-authors per documents	2.41
Collaboration index	2.23
Citations per document	12.12
Authors' keywords	11,367
Keywords plus	5,553

As evident from Table 2, the timespan of journals was 1995–2019, and 10,637 documents included in the data set produced by 16,884 authors. A majority of the documents (13,792 of 16,884) were multi-authored papers. In the concerned 24-year period, an average of 443.2 publications was produced annually. Each publication received an average of 12.12 citations. Considering this information, it can be said that qualitative researchers typically prefer publishing multi-authored papers, and a very large number of publications are produced in the qualitative research literature with annual 443.2 publications.

It is also important to clarify the counting methods and thresholds.

- Co-word, co-authorship and co-citation analysis were performed according to full-counting method.

- The network parameters – Field: Keyword Plus, Normalization: Association, Nodes: The first 50, Minimum Edges: 2.

- Sankey diagram parameters – Field: Keyword Plus, Number of Words: 250, Weight Index: Inclusion index weighted by word co-occurrences)

Results

Publication, Citation and Network Profiles of Countries and Institutions

Table 3. Top 10 countries With Regard to Publications and Citations

SCR	Country	TP	%	SCR	Country	TC	ACd
1	US	5,263	32.146	1	US	42,322	14.371
2	Canada	4,460	27.241	2	UK	19,468	14.006
3	UK	2,575	15.728	3	Canada	18,467	11.406
4	Australia	1,379	8.422	4	Taiwan	11,588	724.250
5	Sweden	948	5.79	5	Australia	9,020	15.211

6	Norway	546	3.335	6	Denmark	5,851	36.342
7	Denmark	407	2.486	7	Sweden	4,108	10.118
8	New Zealand	313	1.911	8	Norway	2,758	10.901
9	Israel	243	1.484	9	Israel	1,667	14.127
10	South Africa	238	1.453	10	New Zealand	1,457	8.939

SCR = ranking, TP = publications, TC = citations, ACd = average citations per document

A country-based analysis was performed in Table 3 for the number of publications (TP) and citations (TC) in qualitative research. It was found that the country with the highest number of publications is the US (TP = 5,263), followed by Canada (TP = 4,460) and the UK (TP = 2,575). According to Table 6, considering the shares of the top 10 countries in the total number of publications, it can be seen that approximately three-quarters of the publications are produced by these top three countries. Moreover, geographically, the top 10 countries are located in the continents of America, Europe, Africa, and Australia.

It is worth noting that there are conspicuous differences between the lists of top countries with regard to the total number of publications and citations. First, the UK received more citations than Canada and took the second place. With regard to the citations, another critical finding is the position of Taiwan. According to our data set consisting of selected journals, although Taiwan has only 37 publications and had a relatively lower position in terms of publications, it took fourth place in terms of citations. This finding revealed that the large number of citations received by the research paper by Hsieh and Shannon (2005) titled “Three approaches to qualitative content analysis” is effectual for Taiwan’s position in citations. This finding can be explained as data analysis is highly desired in qualitative research.

Table 4. Intra- and Inter-Country Collaborations Among the Top 10 Productive Countries

SCR	Country	Articles	Freq	SCP	MCP	CCR
1	US	2,945	0.336341	2,725	220	7.47
2	Canada	1,619	0.184902	1,466	153	9.45
3	UK	1,390	0.158748	1,266	124	8.92
4	Australia	593	0.067725	505	88	14.84
5	Sweden	406	0.046368	344	62	15.27
6	Norway	253	0.028894	189	64	25.30
7	New Zealand	163	0.018616	143	20	12.27
8	Denmark	161	0.018387	126	35	21.74
9	South Africa	121	0.013819	95	26	21.49
10	Israel	118	0.013476	110	8	6.78

SCR = ranking, SCP = single-country publication, MCP = multiple-country publication, CCR = country collaboration rate, Freq = Frequency

According to the intra- and inter-country collaborations in Table 4, the top three countries with the highest number of publications were the US (2,945), Canada (1,619), and the UK (1,390). These countries were followed by Australia, Sweden, and Norway. Considering the total number of publications produced by the top three countries, it was determined that these countries produced a large number of publications in the qualitative literature compared to the other countries. Moreover, regarding the multiple-country publications (MCPs), the US (220), Canada (153), and the UK (124) secured the first three places in terms of the number of publications. According to the country collaboration rate (CCR) averages, the top countries open to collaboration were determined as Norway (25.30% CCR), Denmark (21.74% CCR), and South Africa (21.49% CCR). Furthermore, our analysis indicated that a few countries such as Israel (6.78% CCR), the US (7.47% CCR), the UK (8.92% CCR), and Canada (9.45% CCR) mostly produce single-country publications (SCPs). In other words, although the US, the UK, and Canada are the top three countries in terms of publications, they produce mostly SCPs. The publication networks of the countries are presented in Figure 2.

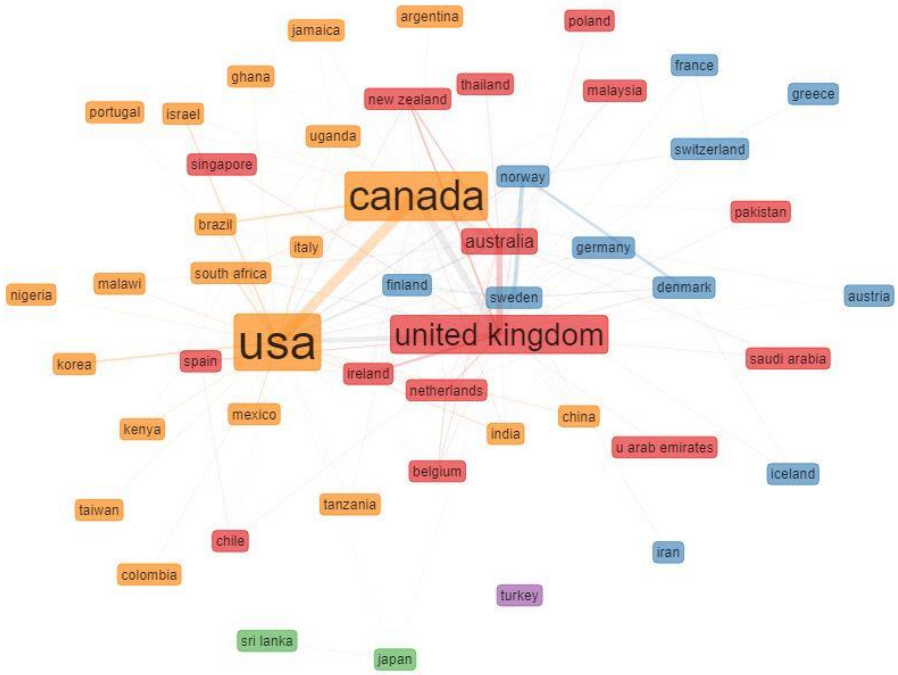

Figure 2. Publication Networks of the Countries

According to the country-level author collaborations, a publication network of 50 countries with the US, Canada, and the UK at the center stands out (analysis thresholds are the first 50 for nodes and 2 for edges). In the publication network, the same-colored countries are placed in the same cluster and the thickness of the lines connecting countries implies the strength of the collaboration. As seen in Figure 2, a strong collaboration exists between Canada and the US. The cluster including these countries consists of a collaboration of 21 countries. Another publication network is the network with the UK at the center. This network shows collaborations of 15 countries from different regions of the

world. The third biggest publication network is the network including Norway, Denmark, and Germany with Sweden at the center. Moreover, it can be argued that Turkey is isolated, and Sri Lanka and Japan establish a collaboration. According to the country-level collaboration networks, another remarkable finding in the networks dominated by the US, the UK, and Canada is that while these countries collaborate mostly with South America, Europe, Africa, the Middle and Far East countries; Europe typically establishes internal collaborations.

Table 5. The Top 10 Most Important Institutions with Regard to Publications

SCR	Institutions	TP	TC	Country
1	Univ Alberta	520	5.039	Canada
2	Univ British Columbia	405	3.950	Canada
3	Univ Toronto	310	2.862	Canada
4	Univ Calgary	253	2.849	Canada
5	Univ Illinois	189	2.277	USA
6	McGill Univ	184	974	Canada
7	Dalhousie Univ	180	613	Canada
8	Cardiff Univ	177	1.141	UK
9	McMaster Univ	177	1.594	Canada
10	Univ Victoria	139	949	Canada

SCR = ranking, TP = publications, TC = total citations

As evident from Table 5, the most productive institutions in qualitative research are the University of Alberta, the University of British Columbia, and the University of Toronto, respectively. These are followed by the University of Calgary and the University of Illinois. It was observed that the first three did not change in the total citation ranking. Analyzing the top 10 institutions in terms of the number of publications, except the University of Illinois (US) and Cardiff University (UK), all publications are produced by Canada. It was determined that the top 10 institutions in terms of the number of publications were Canada-, US-, and UK-based institutions. The collaboration networks of the institutions regarding the number of publications are illustrated in Figure 3.

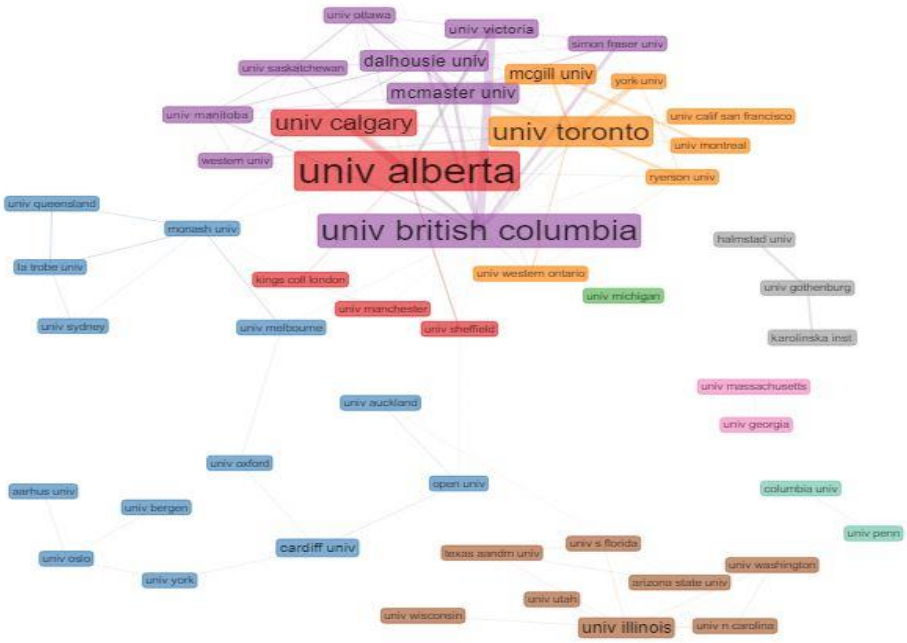

Figure 3. Collaboration Networks of the Institutions

Institutional collaboration networks are also presented in this paper (analysis thresholds are the first 50 for nodes and 2 for edges). Considering each color in Figure 3 represents a cluster and the lines between institutions show collaborations, it can be argued that a huge collaboration network exists in qualitative research. Moreover, except for the independence of the US-centered network including eight institutions formed by the University of Illinois, it can be said that the top 10 countries in terms of the number of publications established intense collaborations.

Publication, Citation, and Network Profiles of Journals, Authors, and Publications

As depicted in Figure 4, while the publication numbers of the SSCI-indexed qualitative research journals in the WoS database exhibited an increase over a 24-year period, especially after 2013, the number of publications displayed a rather fluctuating course.

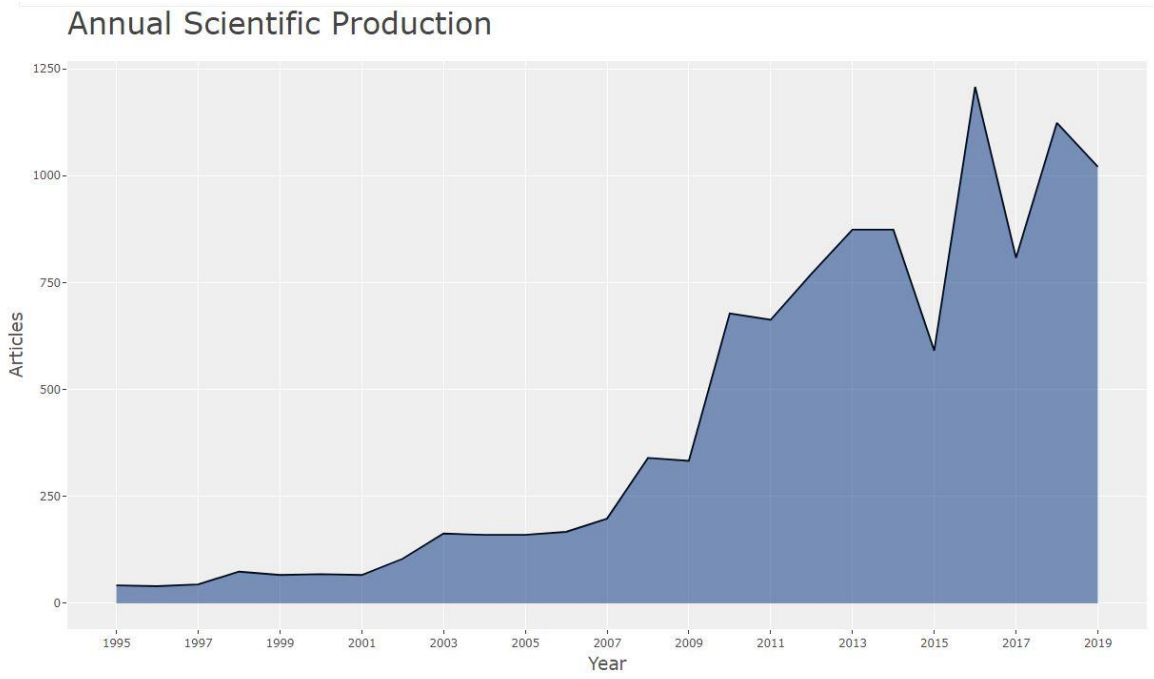

Figure 4. Distribution of Publications per Year

According to the average of the whole period, the increase in the number of publications was calculated as 14.22%. The whole period can be divided into three stages: (1) Until 2007, the number of publications increased steadily. (2) In 2007 (TP:198) and 2016 (TP:1208), the year with the highest number of publications, the publication number increased more than six times on a yearly basis. (3) The number of publications, which was 874 in 2013 remained the same in 2014 and decreased to 591 in 2015. Another striking decrease was in the highest number of publications with 1,208 in 2016 and 808 in 2017.

Table 6. Journals According to The Number of Publications and Citations

Journal	TP	TC	ACd	Publishing Country and Period
The International Journal of Qualitative Methods	3,519	958	0.272	US, 2002–Present
Qualitative Health Research	2,938	7434	2.530	US, 1991–Present
Qualitative Inquiry	1,539	4022	2.613	US, 1995–Present
Qualitative Research	800	2057	2.571	UK, 2001–Present
International Journal of Qualitative Studies on Health and Well-Being	599	454	0.758	UK, 2006–Present
Qualitative Social Work	554	781	1.409	US, 2002–Present
Qualitative Sociology	367	508	1.384	US, 1978–Present
Qualitative Research in Psychology	213	689	3.234	UK, 2004–Present
Qualitative Research in Accounting and Management	108	195	1.805	UK, 2004–Present

TP = publications, TC = citations, ACd = average citations per document

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As seen in Table 6, the journal with the highest number of publications is The International Journal of Qualitative Methods (3,519), followed by Qualitative Health Research (2938) and Qualitative Inquiry (1539). Among the top 10 journals, there is no country except the US and the UK. When journals are compared in terms of citations, Qualitative Health Research stands out as the most-cited journal (TC: 7,434), followed by Qualitative Inquiry (4022) and Qualitative Research (2057) in the data set. When journals are examined in terms of average citations per document (ACd), it is seen that the Qualitative Research in Psychology (ACd: 3.234) stands out, followed by Qualitative Inquiry (ACd: 2.613) and Qualitative Research (ACd: 2.571). It has been observed that The International Journal of Qualitative Methods stands out in terms of number of publications and so does Qualitative Health Research in terms of total citations, and finally Qualitative Research in Psychology in terms of ACd.

The Top 10 Most Influential Authors in Terms of Publications and Citations

The contributions of authors to qualitative research literature were appraised based on the number of publications, citations, and collaborations.

Table 7. The Top 10 Most Influential Authors in Terms of Publications and Citations

Authors	TP	FP	Authors	TC
Morse JM	157	142.5250	Denzin NK	1,643
Staller KM	34	30.7500	Glaser BG	1,118
Dickson SV	34	11.9167	Morse JM	1,053
Kenny A	32	10.5750	Charmaz K	979
Thorne SE	32	10.0151	Foucault M	896
Liebenberg L	31	20.5742	Strauss AL	827
Clark AM	26	11.9909	Goffman E	776
Koro-Ljunberg ME	26	5.2351	Lincoln YS	738
Lahman MKE	25	10.0176	Sandelowski M	634
Adams J	21	9.4000	Deleuze G	599

TP = publications, FP = fractionalized publications, TC = total citations

The top 10 authors with the highest number of publications and citations were determined. As seen in Table 7, Morse is at the top of the list with a remarkable number of publications of 157. Even the following authors, Staller and Dickson, have 34 publications each. Moreover, to determine the actual contributions of the most influential authors of the literature, fractionalized publications (FPs) were also analyzed in this study. This method compares the publications according to the number of authors to determine an author's contribution to a publication (Aria, Misuraca, and Spano, 2020). According to the number of FPs of Morse (FP = 142.525), the most important factor is that a majority of his publications are produced by him alone. Likewise, Staller, who was in the second place on the list (FP = 30.75) produced a majority of his publications by himself. Liebenberg (FP = 20.5742) was in the third place on the FP list. With regard to citations, as seen in Table 7, it was found that no authors except Morse were on the list of the top 10 most influential authors. Denzin is the most influential author in terms of citations (TC = 1,643), followed by Glaser (1,118) and Morse (1,053). Considering the top 10 most influential authors in terms of citations, with respect to the research fields, Denzin, Goffman, Glaser, and Charmaz's study field is sociology; Sandelowski, Strauss, and Morse's is health; Lincoln's is educational administration; and finally, Deleuze and Foucault's is philosophy. It can be argued that qualitative literature mostly entails sociology, health, philosophy, and education disciplines. Publication networks of the authors were also examined in this study as schematically presented in Figure 5.

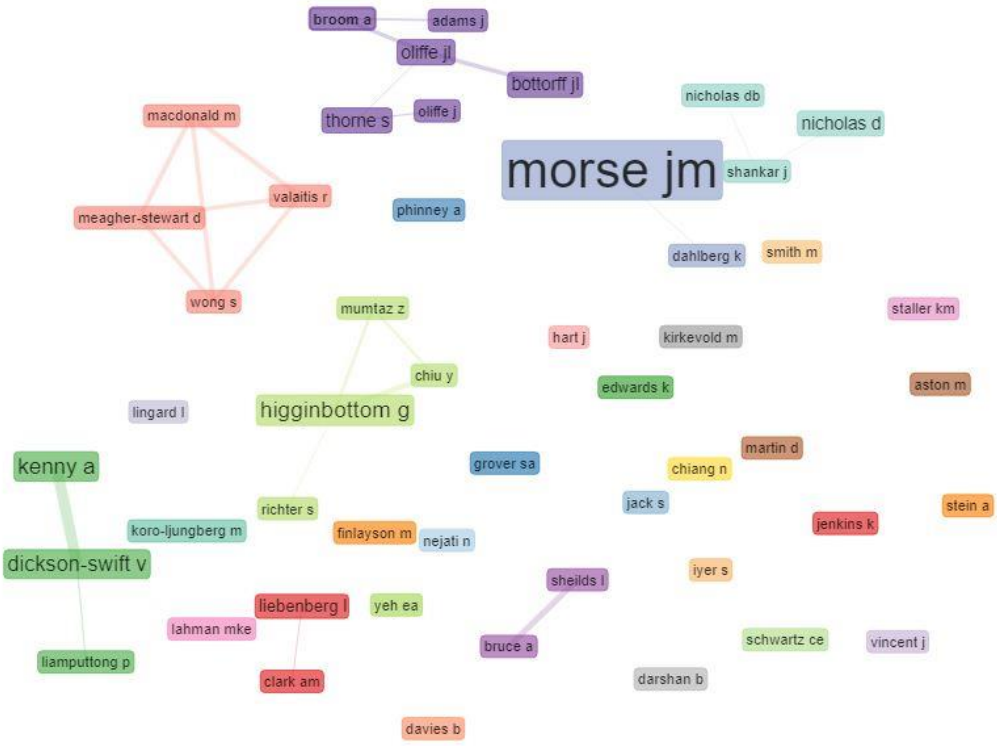

Figure 5. Publication Networks of the Authors

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The authors were also analyzed for co-authorship. Co-authorship networks reveal the network between the collaborating authors and furnish insights about the leading authors in the field and the dynamics of academic knowledge production. In this regard, co-authorship networks with the most powerful connections were identified. In Figure 5, the lines between the authors display the collaboration between authors, and the thickness of these lines reflects the strength of collaborations. In addition, the size of the author's name is an indicator of the author's publication history. It is evident from Figure 5 that the biggest collaboration is the network of six authors including Thorne and Oliffe. Considering the research fields of the authors included in this network, it was seen that they established collaborations in medical sciences, such as nursing and psychological health. The second biggest collaboration is the network of four authors including Wong and Valaitis. The third biggest collaboration is the network of Mumtaz, Richter, Chiu, and Higginbottom. Finally, the collaboration network of Kenny, Dickson-Swift, and Liamputtong is worth noting. According to the collaboration networks in the data set, it can be underlined that the majority of author collaborations are in the field of medical sciences.

The Most Cited Publications, Research Topics, and Changes in Topics over Time

Table 8. The Top 10 Most Cited Publications

SCR	Paper	Theme	TC	ACy
1	Hsieh H F and Shannon SE (2005) Three approaches to qualitative content analysis. *Qualitative health research* 15(9): 1277–1288.	Data analysis	11,444	715.2500
2	Flyvbjerg B (2006) Five misunderstandings about case-study research. *Qualitative inquiry* 12(2): 219–245.	Method	3,769	251.2667
3	Tracy SJ (2010) Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative inquiry* 16(10): 837–851.	How to	1,179	107.1818
4	Bowen GA (2008) Naturalistic inquiry and the saturation concept: a research note. *Qualitative research* 8(1): 137–152.	Saturation	879	67.6154
5	Starks H and Brown Trinidad S (2007) Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative health research* 17(10): 1372–1380.	Method	704	50.2857
6	Guillemin M and Gillam L (2004) Ethics, reflexivity, and "ethically important moments" in research. *Qualitative inquiry* 10(2): 261–280.	Ethics	628	36.9412
7	Malterud K, Siersma VD and Guassora AD (2016) Sample size in qualitative interview studies: guided by information power. *Qualitative health research* 26(13): 1753–1760.	Sample size	624	124.8000
8	Morse JM (2000) Determining sample size. *Qualitative Health Research* 10(1): 3–5.	Sample size	598	28.4762

9	Morse JM (1995) The significance of saturation, *Qualitative Health Research* 5(2): 147–149.	Saturation	595	22.8846
10	Whittemore R, Chase SK and Mandle CL (2001) Validity in qualitative research. *Qualitative health research* 11(4): 522–537.	Validity	557	27.8500

SCR = ranking, TP = publications, TC = citations, ACy= average citations per year

As seen in Table 8, the content analysis study conducted by Hsieh and Shannon (2005) received extraordinary attention with 11,444 total citations and an average of 715.25 citations per year (ACy). This publication was followed by Flyvbjerg (TC = 3,769) and Tracy (TC = 1,179). Moreover, the dataset was also analyzed regarding ACy. Again, Hsieh and Shannon (ACy = 715.25) displayed an extraordinary average, followed by Flyvbjerg (ACy =251.2667), Malterud et al. (ACy = 124.800) and Tracy (107.1818). The analysis of the publications revealed that the most cited publications were regarding qualitative data analysis, case studies, and how to conduct high-quality qualitative research. Considering the number of citations per year, it can be argued that in addition to the above-mentioned topics, scholars frequently cited studies about sample size in qualitative interviews.

According to the top 10 most cited publications, it was found that the most used, searched, and studied topics in qualitative research were data analysis, method selection, how to conduct a qualitative research, saturation and sample size, ethical issues, and validity.

Topic/Term Profiles

Table 9. Top 10 Most Frequent Words

Terms	Frequency
Health	601
Experience	507
Care	435
Women	358
People	312
Qualitative research	237
Perception	218
Children	204
Life	202
Illness	184

As can be seen in Table 9, the most frequent word is health (601), followed by experience (507), care (435), and women (358). Analysis of most frequent words provides an insight into the most addressed and studied subjects in qualitative research. The terms such as health, care, life, and illness indicate a high proportion of medical sciences in qualitative research. The terms women, people, and children reflect data sources in qualitative research. Moreover, the words experience and

perception accentuate the most prominent topics that qualitative researchers mostly discuss, be inquisitive about, and study. The annual occurrence of the words is presented in Figure 6.

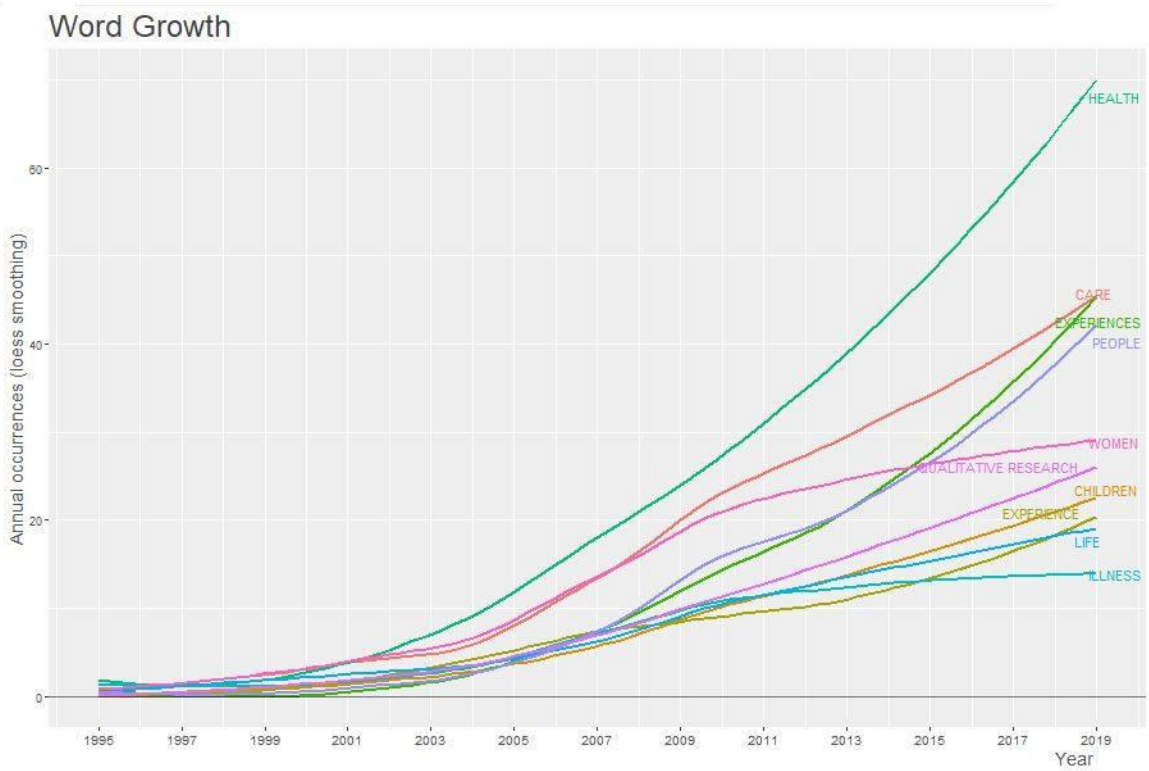

Figure 6. The Annual Occurrence of the Words

Figure 6 illustrates the evolution of the top 10 most frequent words that started to change after 2001. It can be said that from this date, the term “health” is the most frequent word and the terms care, experience and people are displayed a constant increase. As seen in the graph, while the frequency of all words increased, the term “women” was in second place until 2005, it fell into fifth place in 2019 and accordingly, its rising curve became stable after 2005. On the contrary, while the term “experience” was in fifth place in 2009, displayed almost the same frequency as the term care in 2019. A co-occurrence network analysis was also conducted in this study.

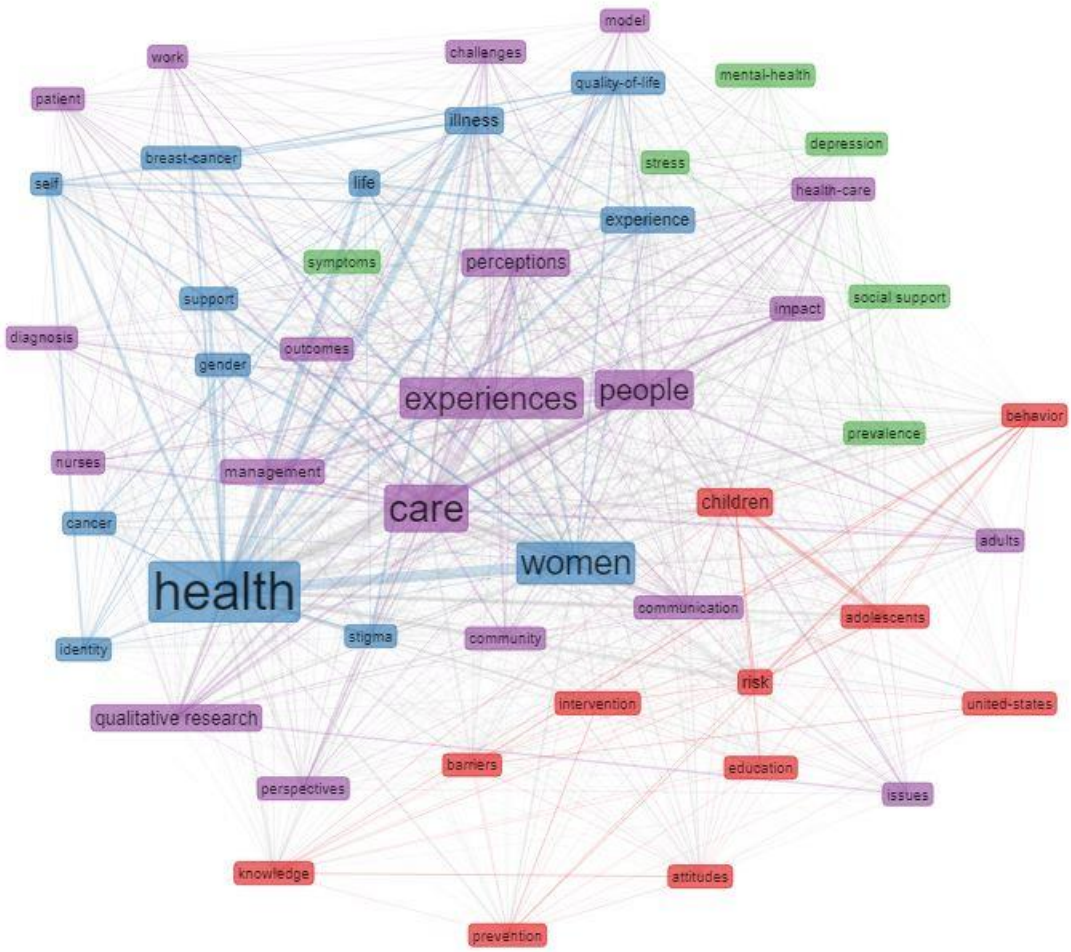

Figure 7. The Co-Occurrence Network

According to the co-occurrence network presented in Figure 7, it was observed that the words are displayed in four different colors of blue, red, violet, and green and are connected by multiple edges. The thickness of the lines between the edges shows the co-occurrence frequency of the terms. In this regard, the term "health" is mostly studied with the terms "gender," "self," "women," "experience," "quality of life," "life," "stigma," "identity," "illness," "support," "cancer," and "breast cancer." The second most notable cluster is violet-colored and includes 20 terms: "qualitative research," "care," "experiences," "people," "perception," "management," "challenges," "communication," "issues," "perspectives," "adults," "nurses," "outcomes," "community," "health-care," "impact," "patient," "model," "work," and "diagnosis." The third biggest cluster includes the terms "education," "knowledge," "behavior," "attitudes," "intervention," "prevention," "risk," "adolescents," "children," "barriers," and "united-states." The last cluster is red-colored and is constituted by the words "mental-health," "prevalence," "social support," "stress," "depression," and "symptoms." After a meticulous analysis of these clusters, it was realized that each cluster

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approximately describes a different field in qualitative literature. Accordingly, the first cluster implies the qualitative research topics directly related to a patient's experiences after a physical or surgical treatment. Likewise, the second cluster is related to “health”; however, typically it is about the concepts of interpersonal relationships and experiences. The third cluster including the term “education” is mostly about the concepts of interpersonal relationships and experiences of individuals in education. Finally, the last cluster generally comprises psychology-related terms. To summarize, each network represents the following four fields:

- Individuals' self-experiences regarding an illness or surgery
- Individuals' social experiences in healthcare
- Analyzing knowledge, attitude, and behaviors related to education
- Social psychology

Thematic Evolution in Publications During the Said Four Phases

The thematic evolution of qualitative literature was also analyzed in this study. This thematic evolution displays the evolution of research trends in qualitative research over time. Thematic evolution enables us to analyze the change dynamics in research fields based on four quadrants. These quadrants were explicated by Cahlık (2000) as follows:

- The themes in the first quadrant (upper right) are both well developed and vital for a research field.
- The themes in the second quadrant (lower right) are important for structuring a research field but are not well developed.
- The themes in the third quadrant (lower left) are both weak and marginal.
- The themes included in the fourth quadrant (upper left) promote the internal connections, but have inconsequential external connections, and therefore, are not critical for structuring a research field.

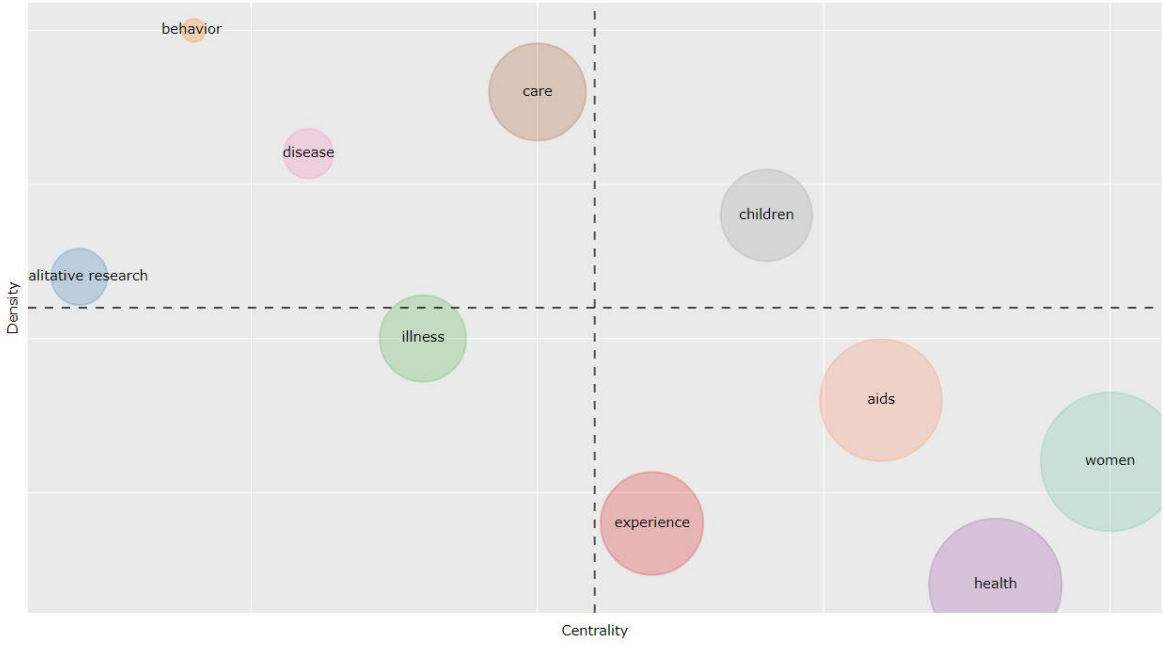

Figure 8. Thematic Evolution (1995-2003)

As evident from Figure 8, 10 principal topics emerged in the 1995–2003 period. Children was the motor theme in the first sub-period. Women, with a high centrality, was the novel basic theme, together with AIDS, health, and experience that consolidated their position as transversal themes. Illness, shifted in the third quadrant, becoming a marginal theme, with a lower centrality. In the fourth quadrant, behavior appeared as an extremely specialized theme for the corresponding period, together with care, disease, and qualitative research with a high density.

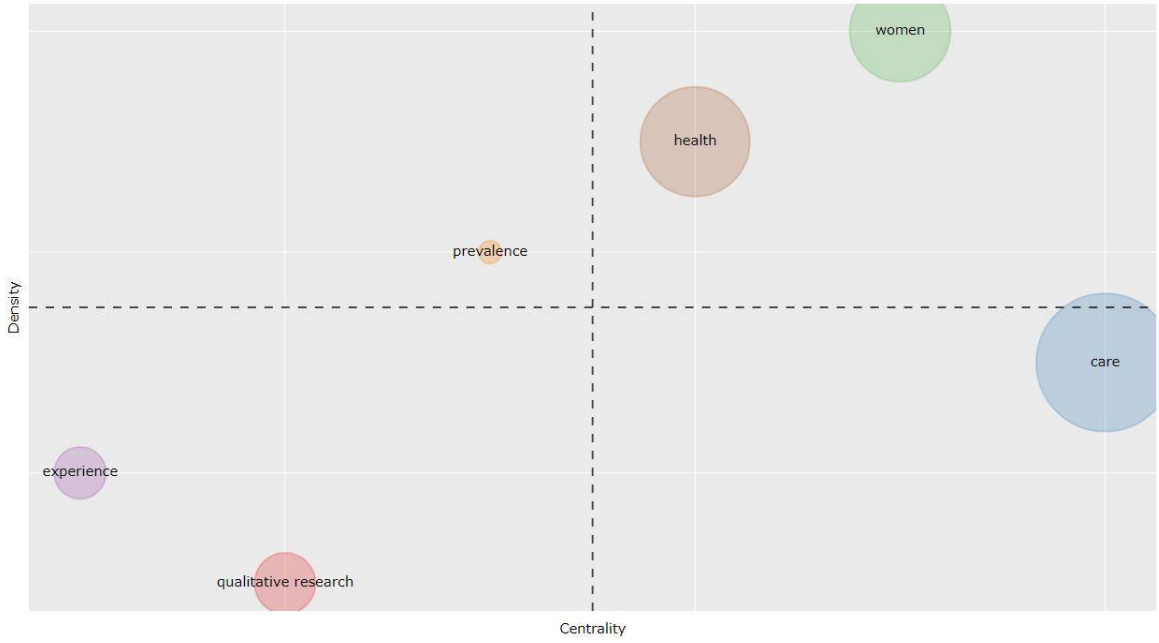

Figure 9. Thematic Evolution (2004-2012)

As depicted in Figure 9, women and health, which are transversal themes compared to the previous period, became motor themes in this period. Care, which was marginal in the previous period, became general and transversal in this period with higher centrality. Qualitative research, shifted in the third quadrant becoming a marginal theme, with a lower centrality and density. Experience, which was a general and important theme in the previous period, lost its importance and centrality. Prevalence appeared in the fourth quadrant as a very specialized theme of the associated period.

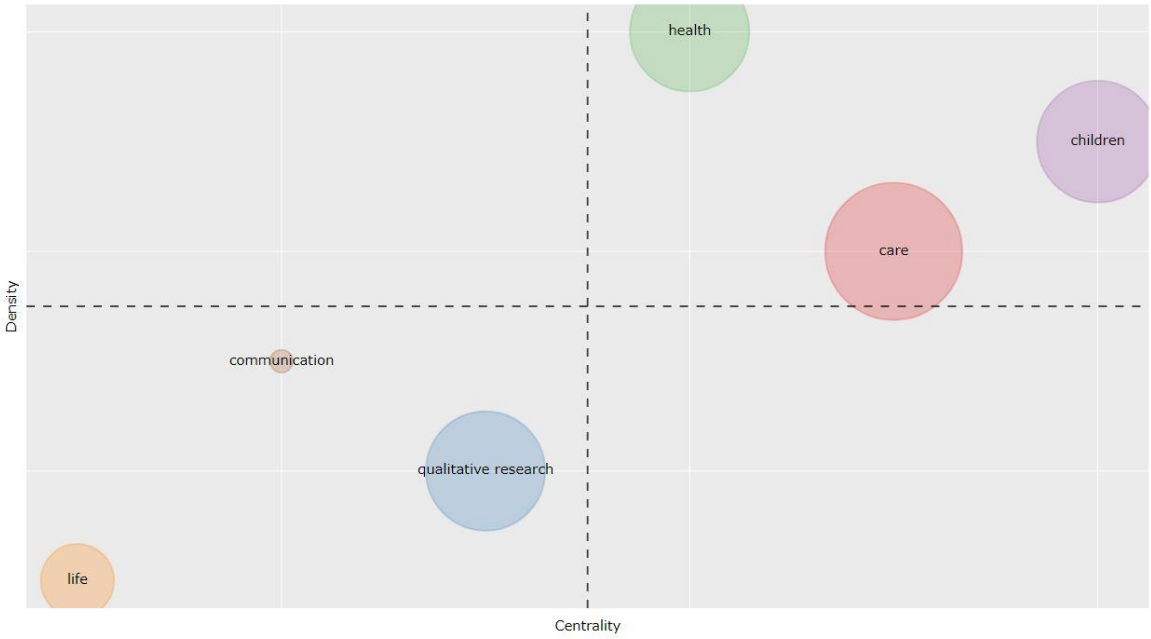

Figure 10. Thematic Evolution (2013-2019)

As displayed in Figure 10, in the 2013–2019 period, children reappeared as the motor theme with a high density and centrality. Health has evidently maintained its place. While women was a motor theme in the previous period, it was replaced by care. In the third quadrant, qualitative research remained a marginal theme, but increased its centrality and density. Life appeared as a marginal theme with a low density and centrality. Communication also appeared as a marginal theme with a relatively higher density and centrality compared to life.

Thematic Evolution of Qualitative Research Through the Sub-Periods.

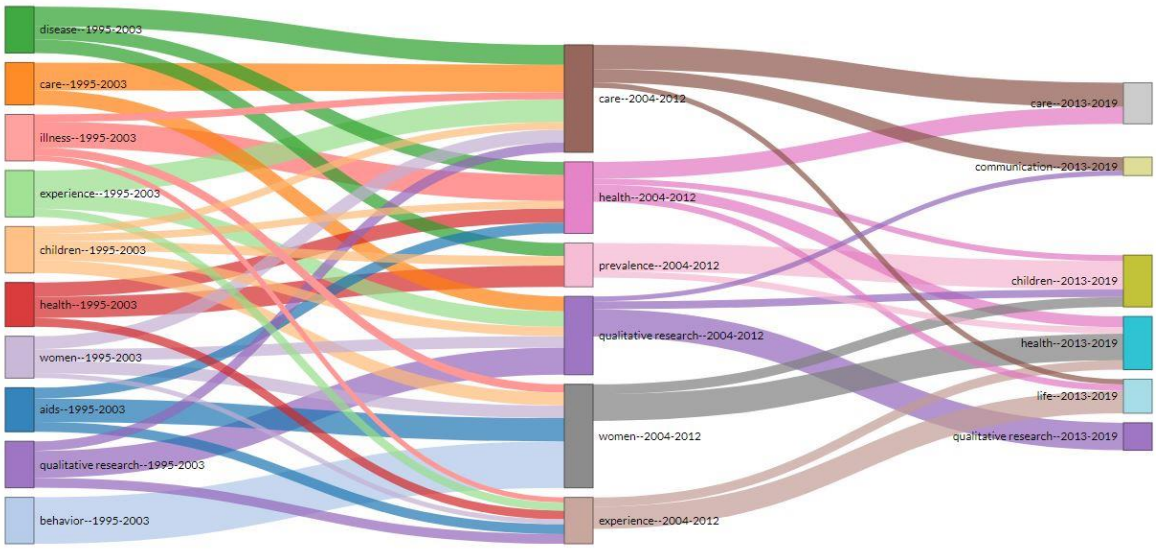

Figure 11. The Thematic Evolution of Qualitative Research (1995-2019)

The Sankey diagram in Figure 11 illustrates transitions between the most frequent words in the selected periods. In the first sub-period, the prevalence of health-related concepts draws attention. The terms “disease,” “care,” “illness,” “health,” and “AIDS” can be associated with research fields; the terms “women” and “children” can be associated with participants; and finally, the terms “experience” and “behavior” can be associated with making sense of human experiences. In the second sub-period, a reduction in sub-concepts attracts attention. Different from the previous period, the concept of prevalence emerged among studied concepts. While the concepts of experience, women, and health stand out in the first two periods, differently, the term “communication” emerged in the final period.

Discussion, Conclusion and Recommendations

Discussion

Our research using the data set obtained from WoS endeavored to demonstrate the global spread of qualitative research. This paper reached a remarkable result in terms of showing the countries and institutions in the “center.” In the center (Hsiung, 2012, 2015; Gobo, 2011; Suadez-Estrada, 2017), the relationship network with the US, the UK, and Canada (36 countries included) has emerged clearly. In total, eight of the top 10 productive institutions are from Canada and the remaining two are from the US and the UK. Moreover, these institutions establish strong collaboration networks. It confirms the argument of Anglophone-dominated science categorization by Gobo (2011), Hsiung (2012, 2015) and Alasuutari (2004), it also asserts that Canada is an important partner of this domination.

However, the relationship network trend of the US and Canada differs from that of the UK. The US and Canada turn to global collaborations. However, the UK is turning to both global and intra-European cooperation. Therefore, Europe constitutes a unique case for cooperating within itself, except for the central countries. Considering this result, it cannot be said that the center and periphery arguments (Hsiung, 2012) fully explicate the European example. Nevertheless, the results of the research confirm the existence of the "center countries" in qualitative research. Moreover, it has been observed that the “center countries" cooperated with many different countries/institutions in the same historical period. The same does not hold true for countries outside the center. Therefore, the network of relations is generally developing between the countries in the center and other countries. The relationship that neighboring countries at the periphery is weak. This again confirms the role played by central countries in qualitative research.

The status of being a center also applies to the number and frequency of content produced in the countries mentioned. The overwhelming majority of publications in the journals reviewed come from one of three countries. These are again the US, the UK, and Canada, the top countries in terms of number of publications. When taken in conjunction with previous results, it implies the central-peripheral distinction (Estrada, 2017), which is considered as present in social science, is also present in qualitative research.

Researchers conducting qualitative research mostly have multi-authored publications. An average of 443.2 publications is produced annually. Results reveal that the most cited studies are mostly about qualitative data analysis, case studies, how to conduct a qualitative research, and sample size in qualitative interviews.

This implies that publications focused on the definitions or practices of qualitative research have attracted considerable attention. Considering that the publications made in the central countries receive more acceptance and interest, Hsiung's (2012, 2015) argument seems more realistic. Therefore, based on this research, it can be said that the contents published in the center are deemed as more crucial in terms of what qualitative research means. To look at it from another perspective, perhaps, as suggested by Loseke and Cahill (2007), the decisions concerning selecting the right options for making references about the definitions of what qualitative research is, may plausibly increase the acceptance rate of submissions from central countries.

Reay (2014) summarized the strategies that should be used when publishing a qualitative research. Smith (1987), just like Reay (2014), wrote an article on publishing qualitative research, this time focusing on different forms in qualitative research. However, when these and similar contents are examined, it can be observed that a window is not opened for international researchers. Again, it is clear that such contents do not refer to a global context and various cultures and societies. It may cause one to think that if the researchers comply with the rules, they will have the opportunity to

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publish without any restrictions. However, this research shows that the opportunity to publish is not just directly related to the behavior of following the rules; rather as stated by Loseke and Cahill (2007), power dynamics need to be brought to the agenda more.

This research demonstrates that qualitative research is implemented more in certain disciplines.

Qualitative literature typically consists of sociology, health, philosophy, and education disciplines. Tracy (2010) argued that the first criteria for producing excellent qualitative research are to find "a worthy topic." The findings of this paper affirm that certain concepts are more "worthy topics" than others in qualitative research. An analysis of research topics revealed that studies focus predominantly on individuals' self and social experiences about an illness or surgery, examination of individuals' knowledge, attitude, and behaviors in education, and social psychology.

Tracy (2010) asserted that any subject in qualitative research ought to be relevant, timely, crucial, and interesting. For instance, Reay (2014) and Smith (1987) and Tracy (2010) did not open any window for global researchers of qualitative research. When others are also examined, no particular criterion (Tracy, 2010), strategy (Reay, 2014), or format (Smith, 1987) were presented to prevent qualitative research studies and researchers from being stuck in central countries. The motivation of such a logic itself is indeed debatable. The golden criterion, strategy, and logic of form can impose a uniform and thus dominating language. Therefore, as Alasutaari (2007) cogently argued, it is imperative to defend the existence of qualitative research styles, criteria, and strategies that vary at a global level rather than a single form or definition.

Results

This study shows that qualitative research is constrained by the widely discussed phenomenon of central-peripheral differences. The analysis of the institutions with the highest number of publications, most cited publications, and collaborations of institutions revealed that the central countries, the UK, the US, and Canada are not only at the top of the list, but also left no room for other institutions and researchers.

The results of this research confirm the existence of "center countries" in qualitative research. Moreover, it has been observed that the center countries cooperated with many different countries and institutions in the same time period, i.e., 2000– 2020.

Centrality also applies to the number and frequency of publications produced. This finding confirms the productivity of the above-mentioned countries, institutions, and researchers. However, the same situation indicates that limited research, limited cooperation, and limited publications furnishing information on different cultures, societies, and situations are available for the global

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community. An overwhelming majority of publications in the journals reviewed comes from one of three countries. In other words, it can be remarked that the meaning of qualitative research is determined by the researchers from the central countries.

The results of the research are interesting as they show that certain subjects are studied relatively more frequently in qualitative research. Our results further reveal that studies focus mostly on "individuals' self and social experiences about an illness or surgery, examination of individuals' knowledge, attitude, and behaviors in education, and social psychology."

This study aimed to profile an enormous body of literature by examining 10,637 publications by 16,884 researchers. Our research was limited to the determined inclusion / exclusion criteria. No need to express that qualitative research is not limited to these contents/publications. There are hundreds of thousands of qualitative research-based publications in sources that our research data cannot cover. Therefore, the readers of the research should take into account that the study presents a photograph limited only to the contents examined. Another limitation of the study is the language limitation in the data source. This study examined only the contents published in the English language. This limitation restrains our knowledge of qualitative research content profiles published in different languages.

Recommendations

Including researchers from different parts of the global world in qualitative research publications and collaborations is reckoned as indispensable. To make this possible, several solutions can be considered. For instance, prestigious publishers and journals may establish an actual international study group and an international perspective, support multinational publications, and support publications in different languages in addition to English. In a general sense, cultural differences must not be considered as a factor creating difficulty in editorial processes for the international community (Alasuutari, 2004). As suggested by Chenail et al. (2007), if publishers and editors exhibit a supportive attitude toward publications and researchers from different cultures and communicate with cultural differences through negotiation, such processes can become more productive.

We have proposed some research avenues. By the latest version these avenues as: Researchers using bibliometric method can benefit from larger databases to monitor the actual and historical patterns of qualitative research. It would also be a research aim to monitor the area specific bibliometric studies. It would be really interesting to compare and contrast the patterns in general and area-specific studies related to qualitative research.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Determination of Cognitive Structures in Concepts Related to Writing Education With the Word Association Test

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Abstract

This research was conducted as a case study, which is one of the qualitative research methods, to determine how prospective Turkish teachers explain the concepts in their minds about writing skills. The study group consists of 60 3rd-grade prospective teachers studying at the Department of Turkish Language Education of Hatay Mustafa Kemal University in the 2018-2019 academic year. Research data were collected through a word association test. In order to reach the concepts that best describe the writing skill, first of all, ten concepts were determined by the researcher within the scope of the relevant course. Then, the test prepared with these concepts was presented to the expert opinion, and the word association test was designed with the remaining six concepts (writing, text, text types, narrative text, informative text, and argumentative text). In the data analysis, the answers of the prospective teachers to the word test were examined in detail and independently with an expert to ensure reliability. Frequency distribution was created with the frequency of repetition of the concepts related to key concepts. According to the frequency of the concepts, the breakpoint technique (Bahar, Johnstone & Sutcliffe, 1999) was used. In this study, breakpoint points between 20 concepts and above, 15-19 concepts, 10-14 concepts, and 5-9 concepts were applied. Concept networks were created separately according to the pre-test and post-test. According to the data obtained, the concept in the pre-test (f =1.636) increased to (f=1.732) in the last test. While the least increase was observed in the "writing" key concept (f=299-302), the highest increase was found in the "text" concept (f=263-292). The number of sentences containing academic information about key concepts increased from pre-test to post-test (f=116; f=179). The number of sentences without academic information (f=189-f=115) decreased. Moreover, the decrease in sentences containing misconceptions (f=29-f=13) supports this situation. When the sentences were examined in terms of including scientific information, it was found that academic expressions were used more accurately, and misconceptions were reduced.

Keywords: Writing education, word association test, concept.

DOI: 10.29329/epasr.2022.248.14

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Introduction

Language is a systematic structure with rules that enable a person to communicate both with himself and his environment. The teachers, who carry out language education and training, teach their students the language skills based on language rules. In this process, teachers' goal is to carry the learning process that starts with language skills to functional language use. In functional language use, the learner should be able to understand and explain correctly by being aware of the features of the language.

People have shed light on future generations through writing from past to present because it is a language skill that ensures the permanence of a nation's culture, thought, and aesthetic sense. The writing skill is the part of the language in which it is written. It is a planned and systematic transfer of one's thoughts on a subject according to language rules. "Since writing is concerned with organizing information and conveying meaning, it is a very important part of the thought development process related to long-term memory, which constitutes episodic memory that includes the visual and auditory aspects of events and experiences and semantic memory that reflects information, thoughts, behaviors, and values, and unconscious memory, which includes emotions" (White and Arndt, 1991, p.17). Hence, it is of paramount importance to know the rules in writing as well as present them to the reader as a meaningful whole. According to Dilidüzgün (2019, p.191), writing creates an environment and time for the individual to practice, test, and develop language so that he can see how much he can use the language, that is, at what level and the extent he can express his thoughts, and see his deficiencies in language. Therefore, writing education is a process that concretely demonstrates the correct use of language skills.

Writing skill in Turkish lessons is a gradual one that students develop under the guidance of the teacher. It can be regarded as the most difficult creative act (Bereiter and Scardamalia, 1996, p.20), and if it comes to 'writing to write,' it is the most difficult skill to develop and operate (Dilidüzgün, 2019, p.189). Prospective Turkish teachers learn the process of acquiring this skill according to the Turkish curriculum in the context of the writing education course.

Learning is the result of the interaction of new information and schemas from outside with concepts in mind. The concept is an information form structure representing the common characteristics of different objects and phenomena, which are meaningful in the human mind, and it is a variable expressed with one word" (Ülgen, 2001, p.100). Concepts are a structure that gives meaning to a person's cognitive structure. The variety of concepts about a subject helps create a mind map of the person about that subject. A mind map is a visualization of the relationship between key concepts related to a topic. "Mind maps are used in the field of education, organization, problem-solving, and decision-making processes, as well as creating, visualizing, designing, and classifying thoughts" (Onan, 2020, p. 240). It is difficult to reveal the cognitive structures of the person as a result

of learning (Kurt, Ekici, Aktaş, & Aksu, 2013, p.187). In this case, Gilbert, Boulter, & Rutherford (1998a), Gilbert, Boulter, & Rutherford, (1998b), and Gilbert & Boulter (2000) suggested that people's cognitive structures could be revealed with key concepts. The word association test can be used to conceptualize the knowledge that prospective teachers acquired about any subject and find out the relationships between these concepts in their minds. Accordingly, this research aims to determine the cognitive structures of prospective Turkish teachers in terms of writing education with word association tests.

Method

Research Model

This research was conducted as a case study, one of the qualitative research methods, to determine how prospective Turkish teachers explain the concepts in their minds about writing skills. The case analysis involves organizing data based on specific situations to make in-depth study and comparison (Patton, 2014, p.447).

Study Group

The study group consists of 60 3rd-grade prospective teachers studying at the Department of Turkish Language Education at Hatay Mustafa Kemal University in the 2018-2019 academic year.

Data Collection Tool

Research data were collected through word association test (WAT), which is a measurement tool that finds out whether the connection between the concepts called back from long-term memory is meaningful (Bahar, Johnstone, & Sutcliffe, 1999) and the cognitive structure of the concepts and people (Bahar & Özatlı, 2003). As one of the alternative measurement techniques, the word association test was applied in two stages in the "Writing Education" course as pre-test and post-test. In order to reach the concepts that best describe the writing skill, first of all, ten concepts were determined by the researcher within the scope of the relevant course. Then, the test prepared with these concepts was presented to the expert opinion, and the word association test was designed with the remaining six concepts (writing, text, text types, narrative text, informative text, and argumentative text). A section from the data collection tool is presented below.

Writing:

Writing:

Writing:

Writing:

Writing:

Related **Sentence**
……..

The following steps were followed in the implementation of this test.

- During the pre-test application process, the WAT was distributed to the students with no writing education. Prospective teachers were informed about the WAT, and 30 seconds were given for each concept. During this period, the participants wrote the concepts and related sentences they had in mind, and the tests were collected.
- Then, after the Writing Education course was taught throughout the semester, the final WAT was distributed. The same process steps were applied again, and the research data were collected.

Data Analysis

The data were analyzed in detail and independently with an expert to ensure the reliability of the prospective teachers' answers to the word association test. Frequency distribution was created with the frequency of repetition of the concepts related to key concepts. According to the frequency of the concepts, the breakpoint technique (Bahar, Johnstone & Sutcliffe, 1999) was used. In this study, the breakpoints between 20 concepts and above, 15-19 concepts, 10-14 concepts, and 5-9 concepts were applied. Concept networks were created separately according to the pre-test and post-test. This concept networks are visualized using the MindMapx program.

Findings

The pre-test and post-test word numbers given by the prospective teachers regarding key concepts are shown in Table 1. While 1,636 concepts were produced in the pre-test, this number increased to 1,732 after the writing education. While the least increase was observed in the "writing" key concept (f=299-302), the highest increase was found in the "text" concept (f=263-292).

It can be argued that an increase in all of the key concepts is an improvement in the learning of the concepts.

Table 1. Number of Words Associated with Key Concepts

Key Concepts	Number of Words	
	Pre-test	Post-test
Writing	299	302
Text	263	292
Text Types	275	292
Informative Text	269	281
Narrative Text	276	284

Argumentative Text	254	272
Total	1.636	1.723

According to the pre-test results of the words associated with the key concept according to the frequency table, the concept network is presented in Figure 1.

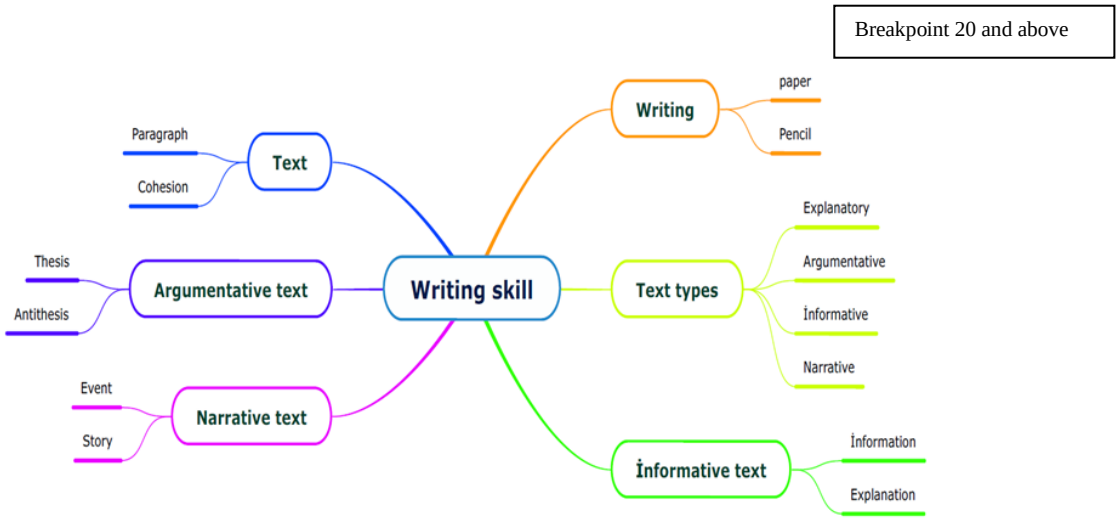
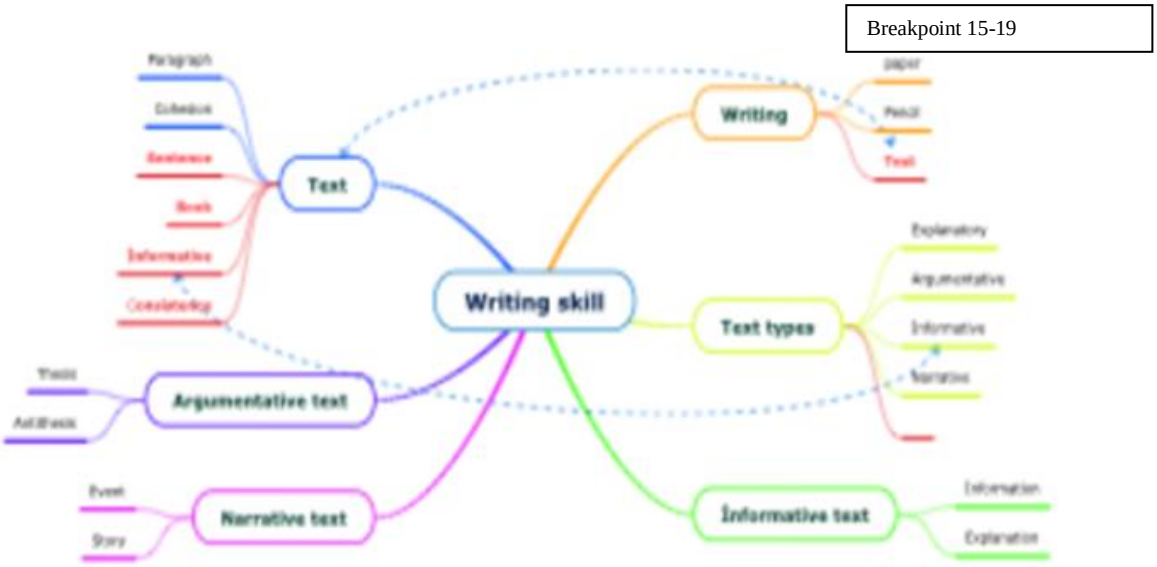
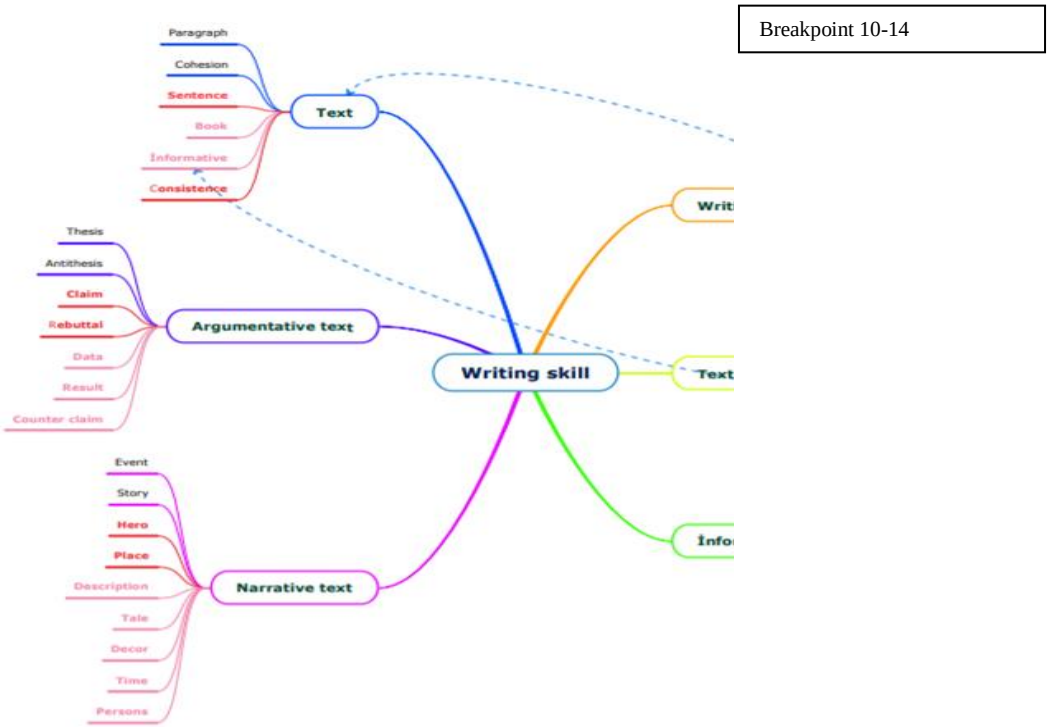


Figure 1: Pre-Test by Key Concepts

It was determined that two concepts related to each key concept were produced at breakpoint 20 and above. Although it is a pre-test, it can be said that the concepts produced are related to the key concept. Text (paragraph and cohesion), writing (paper and pencil), text types (explanatory, argumentative, informative, and narrative), argumentative text (thesis and antithesis), narrative text (event and story), and informative text (information and explanation) were detected, and the concept network was drawn in the form of six islets. It is understood that prospective teachers have misconceptions about text types because the concepts produced are structures related to the text.

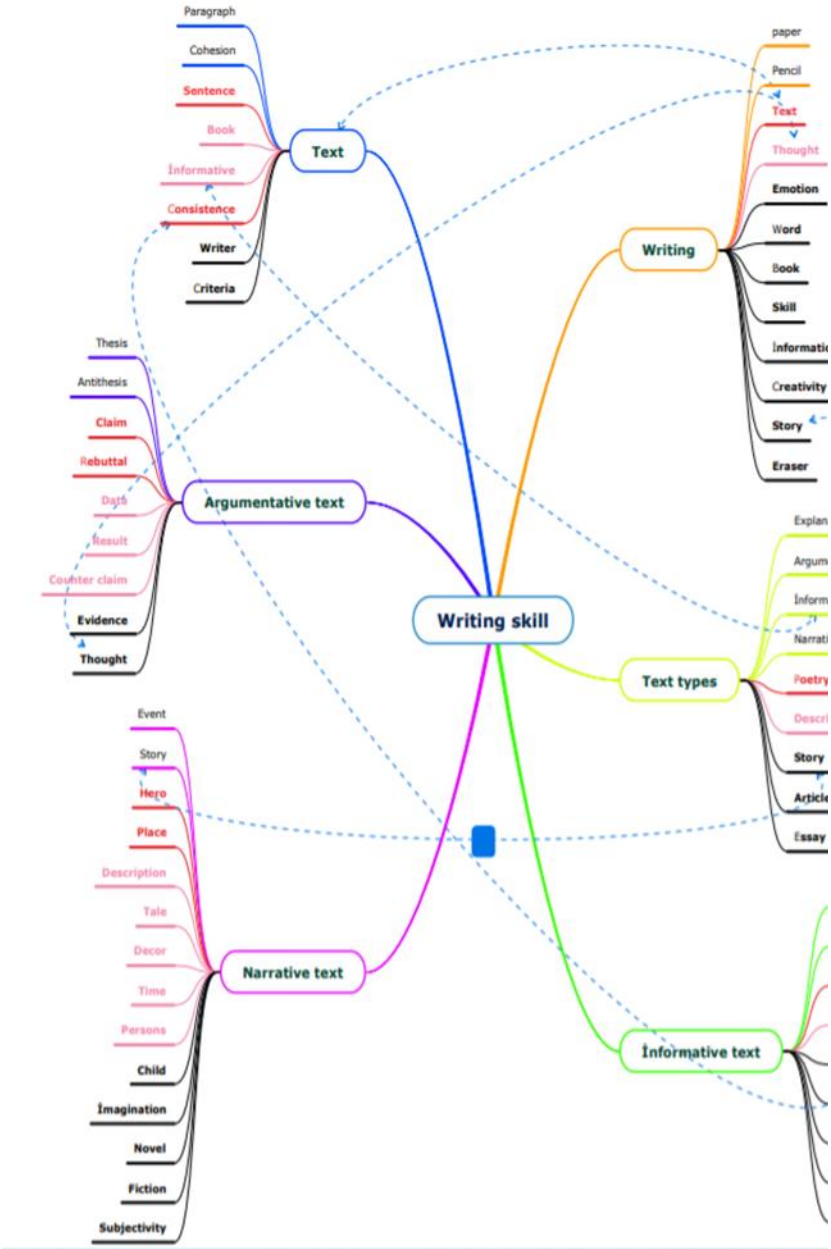


Considering the pre-test key-concept network with a breakpoint of 15-19, writing (text), text (sentence and consistence), text types (poetry), argumentative text (claim and counterclaim), narrative text (hero and place), and informative text (article) concepts were written. At this point, it is seen that the concepts are related to the key concepts.



In the breakpoint 10-14, text (book – informative), writing (thought), text type (descriptive), informative text (objective), argumentative text (data, result, and counterclaim), and narrative text (story, description, decor, time, and persons) key concepts were suggested. It is seen that the concepts that emerge when the range decreases are related to the characteristics of the key concepts.

Breakpoint 5-9



Key concepts in the post-test were written as text (writer, criteria), writing (emotion, word, book, skill, information, creativity, story, and eraser), argumentative text (evidence, thought), text types (story, article, and essay), narrative text (child, imagination, novel, fiction, and subjectivity), argumentative text (evidence, thought), and informative text (consistence, academic, definition, numeric data, and exemplification) concepts. It was observed that the concepts used on the subject increased when the breakpoints decreased. When the concept network of students' writing skills emerges, it is observed that key concepts are related between the concepts of text, informative, story, article, consistence, and thought.

According to the key concepts, the post-tests were categorized as breakpoint 20 and above, 15-19, 10-14, and 5-9, and the concept network was drawn as follows.

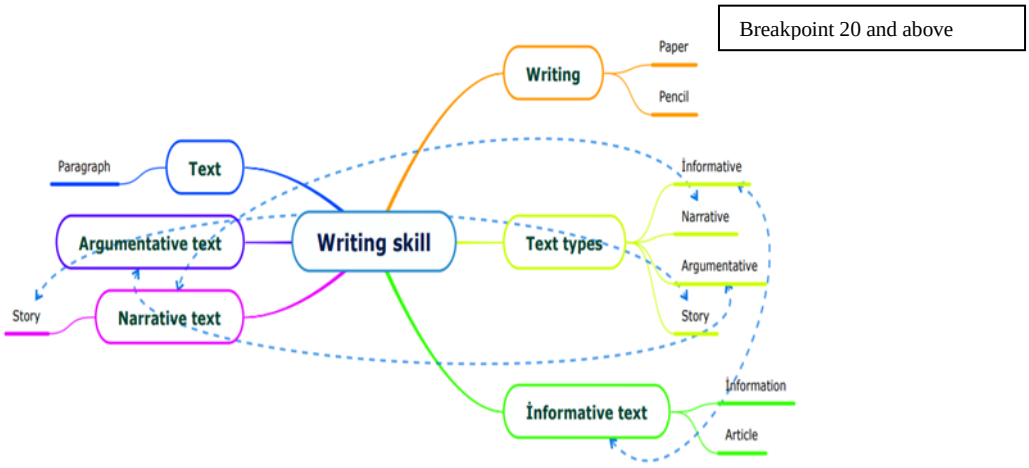
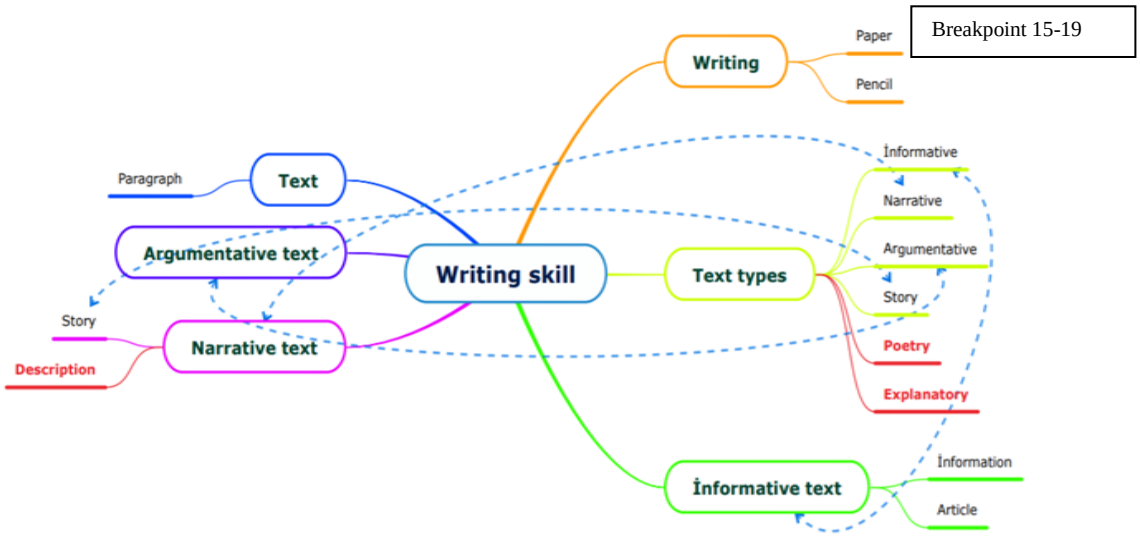
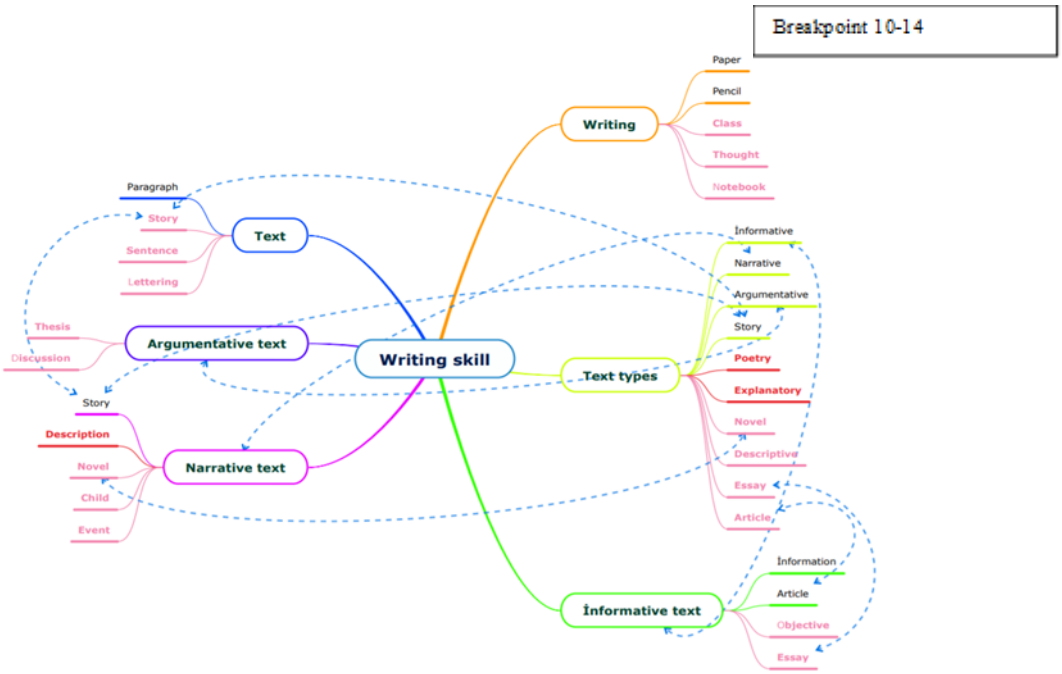


Figure 2: Post-Test by Key Concepts

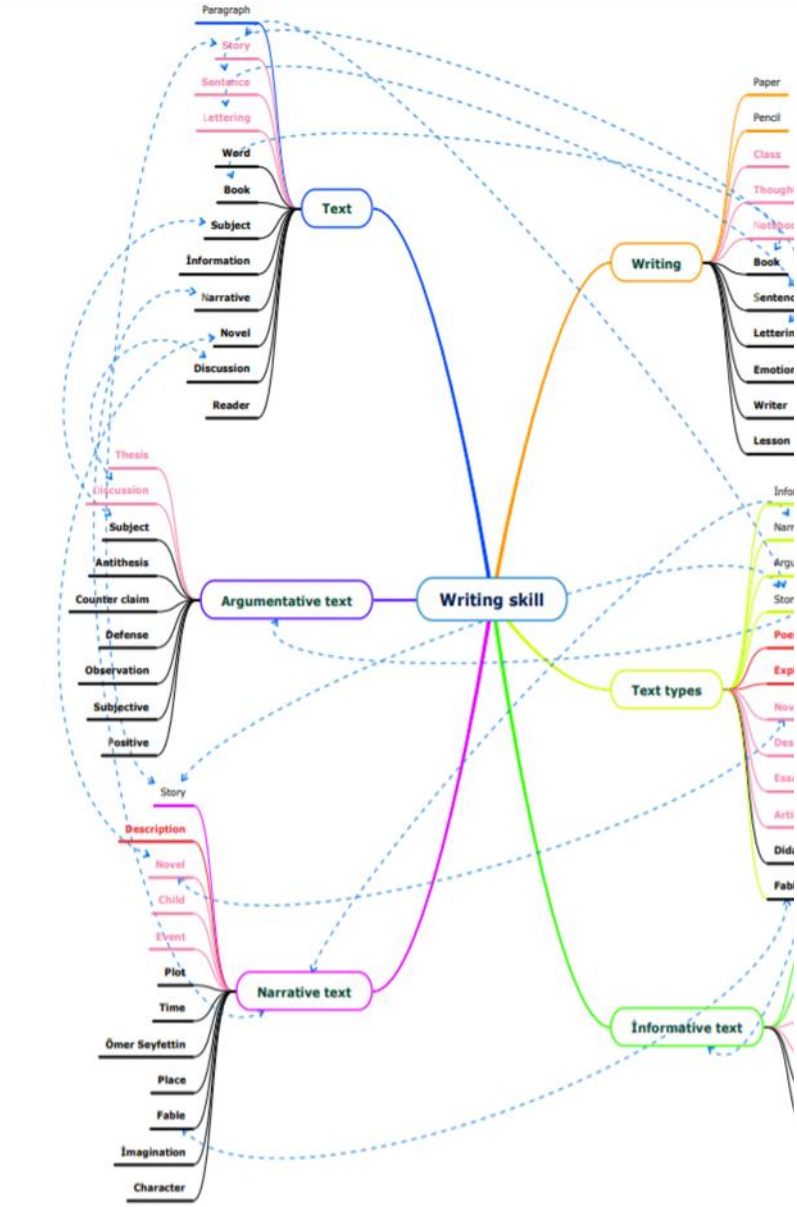
A total of 10 concepts were produced in the key concepts of writing (pencil, paper), text types (informative, narrative, argumentative, story), text (paragraph), narrative text (story), and informative text (article, information). They are associated with the concepts of story, informative, and narrative.



It is seen that three key concepts are added at this breakpoint. Narrative text (description) and text type (poem, explanatory) are the new associated concepts.



A total of 16 words were added at this breakpoint: writing (class, thought, notebook), text (story, sentence, lettering), argumentative text (thesis, discussion), text types (novel, descriptive, essay, and article); narrative text (novel, child, and event), and informative text (objective, essay) concepts were produced. A common relationship was established in the concepts of essay, novel, and story.



Breakpoint 5-9

32 words were suggested at this breakpoint: text (word, book, subject, information, narrative, novel, discussion, and reader), writing (book, sentence, lettering, emotion, writer, and lesson); argumentative text (subject, antithesis, counterclaim, defense, observation, subjective, and positive), text types (didactic, fable); narrative text (Ömer Seyfettin, plot, time, fable, place, imagination, and character), and informative text (anecdote, scientificity). A connection is provided in the concepts of book, sentence, lettering, fable, subject, novel, discussion, and narrator.

Table 2: Pre-Test Frequency Table of Associated Sentences Suggested by Students Regarding Key Concepts

Key Concepts	Sentences with Academic Information	Sentences Without Academic Information	Sentences Containing Misconceptions
Writing	23	31	4
Text	20	27	5
Text Types	15	37	2
Informative Text	27	28	6
Narrative Text	11	41	6
Argumentative Text	20	25	6
	116	189	29

Table 3: Post-Test Frequency Table of Associated Sentences Suggested by Students Regarding Key Concepts

Key Concepts	Sentences with Academic Information	Sentences Without Academic Information	Sentences Containing Misconceptions
Writing	29	19	3
Text	27	19	3
Text Types	27	24	-
Informative Text	26	21	2
Narrative Text	31	20	1
Argumentative Text	29	12	4
	179	115	13

When the above tables are examined, it can be claimed that the participants experienced positive developments in terms of conceptual change. While the number of sentences with academic information about key concepts increased from the pre-test to the post-test (f=116; f=179), there was a decrease in the sentences without academic information (f=189-f=115). This indicates that the education given is organized in accordance with the cognitive structures of the students in writing education. Besides, the decrease in sentences containing misconceptions (f=29- f=13) supports this situation.

Table 4: Some Samples of Associated Sentences Obtained Based on Pre-Test Data

Key Concepts	Sentences with Academic Information	Sentences Without Academic Information	Sentences Containing Misconceptions
Writing	- Writing is hard work. - Writing is a skill that requires education. - Writing is the transfer of feelings and thoughts to paper. - Writing makes narration easier.	- My brother's handwriting is very beautiful. - I take my pencil and start writing in my notebook. - Writing is the art of painting with words. - Writing is one of the most difficult language skills.	- Text linguistics studies the coherence in the surface structure of the text.
Text	- The text should not contradict itself and be consistent. - Text is formed by letters coming together to form a word, words to form a sentence, and sentences to form paragraphs. - There should be coherence and consistent elements in the text. - Each text carries traces of other texts.	- An organized community circulating in white pages. - We used ways to develop thinking in the text we created. - Learning through text is fun. - I read a nice essay text last night.	- In a seminar at the school, fellow speakers gave a speech on psychology.
Text Types	- Text types should not be given directly to students; they should be implied beforehand. - Text type is found by examining its content and narrative style. - Text types are examined under three categories. -Text types are indispensable for the literature course.	- We were asked to prepare a board about text types. - It is very difficult to distinguish text types. - I can distinguish between informative and narrative text types. - Writing an effective and beautiful story requires ingenuity.	
Informative Text	- Informative texts are objective texts that make readers think. - Texts written on the basis of certain evidence are named informative texts. - In informative texts, it is necessary to benefit from numerical data, explanatory information, and examples from time to time. - Objective information is dominant in informative text type.	- I think that with the help of an informative text, I can get rid of harmful habits. - Informative texts form the infrastructure of science. - In the articles, some information, thought, or concept is tried to be conveyed by the teachers. - We often come across informative texts.	- In the event about the treatments for medical students of our university, very important information was mentioned.
Narrative Text	- Narrative texts are texts that develop the child's imagination. - Elements in narrative texts are event, person, place, and time.	- 5th and 6th-grade level narrative texts are quite clear. -In narrative texts, events	

	- In narrative texts, the hero is introduced by description. -Fictional meaning is presented to us in narrative texts.	happen with heroes. - Narrative texts attract the attention of children more. - I love reading stories at night and thinking about this story I read.	
Argumentative Text	- The argumentative text aims to make the author's own opinion accepted by the opposing view. - It is the process of accepting an idea as a result of the evaluation of thought and an opposing thought. - In the argumentative text, first of all, the data should be specified, and appropriate claims should be supported by counterclaims, but it is not always necessary to comply with the counterclaim. - There are two opposing thoughts in the argumentative texts.	- Argumentative texts allow us to have broader knowledge about a topic. - Conditional acceptance was not included in this argumentative text. - Argumentative texts are informative texts. Everyone who reads is more or less knowledgeable.	.

Table 6: Some Samples of Associated Sentences Obtained Based on Post-Test Data

Key Concepts	Sentences with Academic Information	Sentences Without Academic Information	Sentences Containing Misconceptions
Writing	- Writing is the transfer of feelings and thoughts to paper with certain tools and materials. - While writing, we choose words from the generative vocabulary. - Writing is an important tool in reflecting our emotions. - Writing is the alphabetization of the thoughts coming out of the memory from the deep structure to the surface structure.	- Writing is a game that is as tiring as it is enjoyable. - A good pen is required for writing. - He loves to write poetry with his favorite pen. - Our writing was bad, although life offered good poems.	
Text	- Text is to convey information in a certain order using textuality criteria. - The texts are fictional or informative texts that have rules in themselves. - Writing text requires great attention. - The text is paragraphs formed by the juxtaposition of sentences about a particular topic.	- He read a text about the life of owls. - The text in which this love story was told took a very long time. - Reading texts can sometimes be very long. - Reading long texts tires the eyes.	- Metin went to school.
Text Types	- There are text types created to explain a feeling and thought, idea, or to give information about that	- There are many text types. - The text I read was	

	subject. - Text types vary by the purpose of the text. -Text types must be distinguished. -Text types are not given directly in primary education.	informative. - Texts of different genres help our minds work. - It is the narrative text type that I like the most among the text types.	
Informative Text	- It is essential to provide information in informative texts, and this information should be supported by numerical data. - Informative texts are used in education to inform and explain students. -Informative texts are written to inform the reader. -Informative texts usually start with definition sentences.	- Informative texts about education should be created. - Children should read informative text. - If we want to convey information about a particular subject, we can use informative texts. - The subject that I understand best from text types is informative.	- Today, the teacher gave his students homework about animation. - Uranus is one of the celestial planets.
Narrative Text	- In narrative texts, the plot is usually given in sequence. - There is a plot in the narrative texts. - It is among the text types created in the style of story and novel by using event, person, time, and place. - It is fictional.	- My favorite story writer is Ömer Seyfettin. - Generally, narrative texts attract children's attention. - Create a narrative text that everyone builds with their own sentences. - An adventure event is usually told in narrative texts.	
Argumentative Text	- In argumentative texts, while the author supports his own claimed view, he also aims to refute the opposing view. - Argumentative texts in education enable students to evaluate opposing and different ideas. - The argumentative text consists of thesis and antithesis. - The argumentative text is to criticize and interpret the subject in an appropriate style.	- Argumentative texts lead people to find the truth. - Argumentative texts are stimulating. - Argumentative texts allow children to voice their opinions. - We learned the argumentative text features in the lesson.	- There was a dispute in the classroom. - The young man, whose request to play volleyball was rejected, got into a pointless dispute with us.

When the sample sentences formed by prospective Turkish teachers related to the concepts were examined in terms of the pre-test and post-test, the quality of the sentences containing academic knowledge showed a positive change. Additionally, there was a decrease in the sentences without academic information compared to the pre-test. The rate of scientific knowledge in the statements of the students increased. The frequency of misconceptions decreased in the post-tests of key concepts with misconceptions. The most misconceptions were experienced in the key concepts of "informative,

narrative, and argumentative texts" (f=6). In the post-tests, this frequency is ordered as "informative text (f=2), narrative text (f=1), and argumentative text (f=4)".

Discussion and Conclusion

Turkish teachers are those who educate the students in accordance with the curriculum within the framework of language skills. With the Turkish course curriculum (2019), it is necessary to "ensure that students use Turkish consciously, correctly, and carefully with respect to the rules of writing." In this respect, prospective Turkish teachers need to be aware of their cognitive structures related to writing skills. To this end, this study aimed to reveal the concepts in the minds of prospective Turkish teachers regarding writing skills, the relationships between them, and conceptual misconceptions.

According to the findings, academic changes were observed in the pre-test and post-test results in the key concepts of "writing, text, text types, narrative text, informative text, and argumentative text." In terms of concepts, it is (f=1.636) in the pre-test and (f=1.732) in the post-test. It is seen that prospective teachers who indicate concepts related to each key concept can establish relationships between concepts as the breakpoint decrease. Besides, the changes between the pre-test and post-test are positive. The number of sentences containing academic information about key concepts increased from pre-test to post-test (f=116; f=179). Additionally, the number of sentences without academic information (f=189-f=115) decreased. This situation shows that the education given is organized in accordance with the cognitive structures of the students in writing education. Meanwhile, the decrease in sentences containing misconceptions (f=29- f=13) supports this situation. When the sentences were examined in terms of including scientific information, it was found out that academic expressions were used more accurately, and misconceptions were reduced.

As a result of this research, it was concluded that the word association test effectively determined the connections between concepts, cognitive structures, and misconceptions of prospective teachers. Other studies in the literature (Bahar, Johnstone, & Sutcliffe, 1999; Tsai & Huang, 2002; Bahar & Özatlı, 2003; Ercan, Taşdere & Ercan, 2010) also support this result. When the studies using the word association test are considered, previous research were conducted on science (Bahar, Johnstone, & Sutcliffe, 1999; Tsai & Huang, 2002; Bahar & Özatlı, 2003; Ercan, Taşdere, & Ercan, 2010; Kaya & Akış, 2015; Saroğlan & Çelik, 2021; Kostavo & Radoynovska, 2008; Cardellini & Bahar, 2000; and Hovardas & Korfiatis, 2006), social sciences of history and geography (Kaya &Aladağ, 2021; Özkarol & Bozyiğit, 2021; Duban & Küçükyılmaz, 2008; and Işıklı, Taşdere, & Göz, 2011). However, word association tests are important in revealing the cognitive structures of both teachers and students in different language skills in the field of language teaching. Therefore, researches can be increased in this direction.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Examination of Mathematical Errors and Mistakes in Calculus Course

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Abstract

This study was conducted to identify mathematical errors and mistakes made by preservice elementary mathematics teachers in the calculus course. To that end, the document analysis method of qualitative research models was used in the research. The sample of the research included a total of 75 preservice teachers who were attending the Department of Elementary Mathematics Education in the Faculty of Education at a public university and taking the calculus I course during the fall term of 2016-2017 academic year. Accordingly, written documents including the participant preservice teachers' papers of interim exams, practice exams, and general exams constituted the data source. The exam papers were scanned with a scanner and transformed into the electronic environment. A content analysis was performed with the data by using MAXQDA 12 qualitative data analysis program, and "data coding" of data analysis techniques was utilized. It was concluded that the preservice teachers made procedural and conceptual errors and mistakes, mathematical errors and mistakes such as recalling generalizations incompletely or incorrectly. Some recommendations were made in light of these results.

Keywords: Preservice mathematics teachers, Calculus course, Mathematical errors, Mathematical mistakes

DOI: 10.29329/epasr.2022.248.15

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Introduction

Calculus course that mainly examines the functions by utilizing the disciplines of algebra and geometry is an important subject-matter course given in the departments of mathematics education. Mathematical concepts addressed in the calculus course lay the foundation of advanced mathematics used in the disciplines such as mathematics, sciences, engineering, etc. (Ubuz, 1999). Proper understanding and interpretation of advanced mathematical concepts depends on the appropriate learning of concepts given in the calculus course (Gökçek & Açıkyıldız, 2016). In the calculus books, concepts of functions, series, limit, continuity, derivative, and integral are addressed in general (Balcı, 2016; Demir, 2008).

One of the biggest objectives in the calculus course is to examine functions and behaviors of functions. In other words, it is the branch of mathematics engaged in the analysis of functions. Calculus course focuses on examining the image or behavior of a function when its independent variable is infinitesimal or infinitely big. Within this context, students are introduced to the concepts of function, limit and continuity in the first place, and then, several exercises are performed so that they become more competent at operations related to these concepts (Kabaca, 2011). Next, the concept of derivative, conceptually based on limit and continuity, is taught while emphasis is made on the operation of finding the function which is a derivative of a function in the meantime. Finally, concept of integral, also conceptually based on the concept of limit, is taught. In the teaching of integral, firstly, finding an antiderivative for a function is addressed, and then, it is taught under the title “applications of integral” that the concept of integral means a Riemann sum applied under the operation of limit. In summary, Calculus is an important branch of mathematics that include limit, continuity, derivative, integral of functions, and applications of these concepts (Sofronas et al., 2011).

In Turkey, students meet these concepts addressed in the calculus course in their secondary education years for the first time. Thus, they are key mathematical concepts for students who will choose majors related to sciences and mathematics at university. Since understanding of these concepts substantially requires correlating them, it also requires advance thinking skills (Gökçek & Açıkyıldız, 2016). Students have difficulty comprehending these concepts due to their consecutive and abstract nature (Dereli, 2015). Hence, studies are carried out so that students can comprehend the concepts in the calculus course (Barak, 2007). According to Ubuz (1999), tendency to do operations by rote, conceptual incompetence, and the need to improve quality in advance mathematics teaching require studies about concepts in the calculus course.

Answers provided throughout the calculus courses and to the exam questions by students who have succeeded in passing the university entrance exams and enrolled in the department of elementary mathematics teaching show that they make a great number of errors and mistakes in regard to those concepts. There might be several reasons for these errors. One reason might be that high school

teachers ignore their actual roles about teaching and perform question solving activities based on rules or formulas to prepare students for the exams. In this case, teachers overlook conceptual learning and give wide coverage to question solving based on procedural learning to prepare students for university entrance exams. In other words, when teachers set it as an objective to prepare students for undergraduate placement exams and lay more emphasis on subjects about possible questions in such exams and teach the subjects in line with rote learning, it might prevent students from learning the mathematical concepts completely. This is supported by the statements of preservice mathematics teachers attending the faculty of education under teacher formation program. As stated by them, mathematics teachers whom they observe at the schools they visit for the Teaching Practice course usually teach subjects in summary and at a fast pace and solve a great number of questions for university entrance exams. This means that teachers conduct instruction based on procedural learning rather than conceptual learning. As a result of learning that ignores the conceptual aspect, students make several errors and acquire misconceptions about mathematical concepts (Gür & Barak, 2007; Koparan, Yıldız, Köğce, & Güven, 2010; Yıldız, Baki, Aydın, & Köğce, 2010; Yıldız, Taşkın, Aydın, & Köğce, 2011; Yıldız, Taşkın, Köğce, & Aydın, 2011). Tall (1992) states that abstract thinking is a prerequisite for transition to advanced mathematical thinking. Although lecturers try to teach in a way that they improve students' conceptual understanding to ensure their transition to advanced mathematical thinking in the undergraduate education, preservice teachers tend to maintain the learning mentality which they have acquired before undergraduate education. Both in the calculus course and the others, whereas preservice mathematical teachers can answer quickly if they know the proper formula or rule for the answer when they are asked questions, they find it difficult to explain the underlying conceptual structure of their operations when they are asked to justify their answers. That is to say, if they cannot recall the formula or rules regarding the answer, they stop finding the solution, or even if they find it, they have difficulty making a conceptual explanation of their solutions. In fact, I observed informally during the analysis course teaching that the mistakes made by some pre-service teachers who could not produce correct answers to the questions included unscientific insights. In the literature, non-scientific conception is commonly called "misconception" (Driver & Easley, 1978). Accordingly, the fact that some of the errors or mistakes made by preservice teachers in the calculus course are scientifically unacceptable warranted the investigation of such mathematical errors. Studies in the literature (Kertil, 2014; Zandieh, 2000) have explored that students have deficiencies in their conceptual understanding although they possess procedural understanding of some of the basic concepts in the Calculus course.

It is seen in the literature that studies have been performed on how undergraduates comprehend certain mathematical concepts addressed by the content of calculus course (Baki & Çekmez, 2012; Delice & Sevimli, 2012; Gökçek & Açıkyıldız, 2016; Göktaş & Erdoğan, 2016; Doruk & Kaplan, 2018). However, no study was observed to have investigated errors and mistakes

made by preservice teachers and the difficulties they experience when using the concepts in the calculus course or doing operations. The results to be obtained from this study can also help the development of qualified materials and textbooks related to the calculus course. Thus, this study aimed to identify mathematical errors and mistakes made by preservice elementary mathematics teachers in the calculus course. The following main research problem was asked to that end: "What mathematical errors and mistakes are made by preservice elementary mathematics teachers in calculus course?"

Method

Research Model

This study utilizes the document review method of qualitative research methods which allows for the examination of a certain text or document by digitizing its properties through content analysis (Karasar, 2019). Document review includes the analysis of written and published documents about the subjects to be studied. Document review makes it possible to analyze documents generated in a certain period of time about a research problem or to analyze documents generated by multiple sources and at different times about the relevant subject in a long period of time (Çepni, 2012; Yıldırım & Şimşek, 2018).

Participants

The participants of the research included a total of 75 preservice teachers who were attending the Department of Elementary Mathematics Education in the Faculty of Education at a public university and taking the Calculus I course during the fall term of 2016-2017 academic year. The criterion sampling method was used to determine the participants of the study. In this type of sampling, the study group is determined according to predetermined criteria ((Patton, 2014). The fact that the teacher candidates in the study group were taking the Analysis I course was determined as a criterion.

Data Collection and Analysis

In this study, the answers given by 75 pre-service teachers who took the Analysis I course to the midterm, practice exam and general exam questions were used as the data source. Ten open-ended questions were asked to prospective teachers in each of the midterm, practical and general exams. In other words, 30 open-ended questions were asked in total. These questions were prepared by the instructor in order to measure the knowledge of the pre-service teachers in the concepts of limit, continuity, asymptote, derivative, increasing and decreasing, maximum and minimum, curvature of curves, curve drawings and integral concepts in functions.

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The data obtained with the document review were subjected to content analysis of qualitative analysis methods, and data coding of data analysis methods was utilized in the study. It is mainly aimed with the content analysis to explore concepts and relationships that can explain the collected data. In other words, content analysis is a top-tier analysis based on coding. Coding allows for identification and categorization of data. It is accordingly required that the data obtained are first coded, and then, they are logically organized by the codes and themes, which explain the data, are determined. Thus, coding enables the examination and interpretation of data time and again. In this study, 75 participant preservice mathematics teachers' papers of interim exams, practice exams, and general exams were scanned with a scanner and transferred into the electronic environment. The digitalized data were analyzed using the MAXQDA 12 qualitative data analysis program. An answer key prepared by the research for the solution of each question in the documents to be examined in the research was reviewed together with a subject-matter expert, and it was ensured that the expert became familiar with the solutions. To analyze the obtained data in a reliable way, 10 randomly selected exam papers were independently analyzed by the researcher and subject-matter expert categorizing the answers by their similarities and differences (Merriam, 1988; Yin, 1994). The degree of agreement of the coding performed by the researcher and the subject-matter expert was calculated with the formula "Reliability = (Number of categories agreed on) / (Total number of categories agreed and disagreed on)" (Miles & Huberman, 1994). It was concluded that the coding performed independently by the researcher and the subject-matter expert was reliable by 95%. Miles & Huberman (1994) state that inter-rater agreement being 0.70 and above is sufficient for reliability. It was therefore decided that the agreement between the coders was reliable.

The categories generated by the researcher and the subject-matter expert in separate analyses were reviewed by them together; similar categories were clarified, dissimilar categories were discussed, and a consensus was reached through discussion (Merriam, 1988; Yin, 1994). Next, as agreed by the researcher and the expert, the rest of the exam papers would be analyzed by the researcher alone, and at the end of the analysis, the generated codes and themes would be reviewed together with the expert. Accordingly, the remaining exam papers of the preservice teachers were analyzed and categorized by the researcher by their similarities and differences. The codes and themes generated once the data analysis was completed were submitted to the review by the same subject-matter expert and finalized according to the recommendations.

Those codes generated with the content analysis are presented in Table 1 of the findings section along with frequency and percentage values. Moreover, examples for each type of error are presented in Figure 1-14 with images of the actual participant answers.

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Results

Mathematical errors and mistakes made by the preservice elementary mathematics teachers in calculus course are given in Table 1.

Table 1. Mathematical Errors and Mistakes Made in Calculus Course

Theme	Subtheme	Codes	f	%
Procedural Errors and Mistakes	Errors and mistakes made in examining the change of functions	Failure to create table of signs by interpreting the data	204	16
		Failure to determine convexity or concavity of the function	125	9.83
		Failure to determine the domain	110	8.65
		Failure to interpret the double roots	98	7.7
		Failure to interpret table of signs	96	7.55
		Failure to determine the intervals where the function is increasing and decreasing	90	7.08
		Failure to determine the asymptotes	63	4.95
		Failure to determine function's behavior at extreme endpoints of domain	55	4.32
		Failure to determine the points where the function crosses the axes	38	2.99
		Failure to determine cut point of functions	6	0.47
	Making operational errors		98	7.7
	Failure to determine the limit value		84	6.6
	Failure to use mathematical statements (notations) properly		19	1.49
	Failure to do transformations		15	1.18
	Failure to write a special function as a piecewise function		14	1.1
Conceptual errors and mistakes	Overspecification of a concept	Thinking of every function as polynomial function when taking a derivative	42	3.3
		Thinking of integral as taking derivative	16	1.26
		Thinking of limit as taking derivative	14	1.1
		Thinking of infinite as a certain number	3	0.24
		Thinking of value of integral as area under curve	1	0.08
		Taking only the variable when taking the logarithm of both sides of an equation	1	0.08
		Confusing the concepts of indeterminate and undefined	1	0.08
		Considering square root and exact value as equals	1	0.08
	Overgeneralization of a concept	Thinking of a constant as a variable when evaluating a derivative	15	1.18
		Thinking of finding an integral of trigonometric functions as finding an integral of polynomial functions	14	1.1
		Thinking of taking a derivative of trigonometric functions as taking a derivative of exponential functions	2	0.16

	Thinking that a radicand will always be positive	6	0.47
	Thinking of finding an integral of simple fraction statements as finding an integral of logarithmic function	3	0.24
	Thinking of log function as a multiplier when taking the logarithm of the sum of two statements (log(a+b) = loga + logb)	3	0.24
	Ignoring the function when doing an operation on a variable	2	0.16
	Thinking of a fraction as the sum of fractions that consider each term of the statement as a distinct denominator	1	0.08
	Ignoring the degree of function when finding an integral of trigonometric function	1	0.08
	Expanding a statement of which power is rational by using the square of the sum of two terms	1	0.08
	Thinking of function and variable as a multiplier in a function f(x) = f.x	1	0.08
Recalling generalizations incompletely or incorrectly	Confusing a formula or a rule	29	2.28
Total		1272	100

As seen in Table 1, mathematical errors made by the preservice teachers were grouped as procedural errors, conceptual errors, and recalling generalizations incompletely or incorrectly.

Procedural themes were divided into 6 subthemes. As for the rate of procedural errors and mistakes, 69.54% of the preservice teachers were observed to make errors when examining the change of functions. The most observed error among the errors and mistakes made by the preservice teachers when examining the function transformation is failure to create table of signs by interpreting the data (16%). Figure 1 and Figure 2 present the examples of this error and mistake type from the exam papers of two preservice teachers.

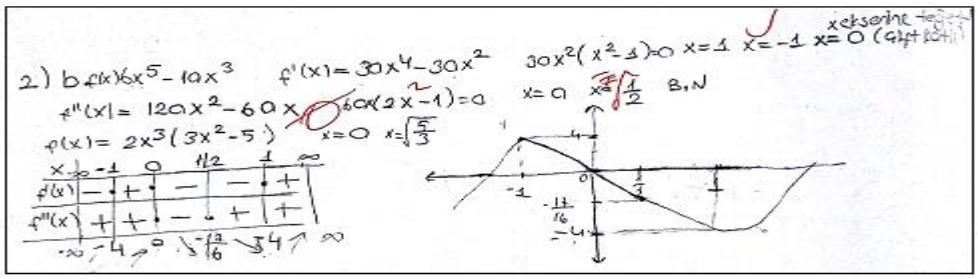

Figure 1. Failure to create table of signs by interpreting the data

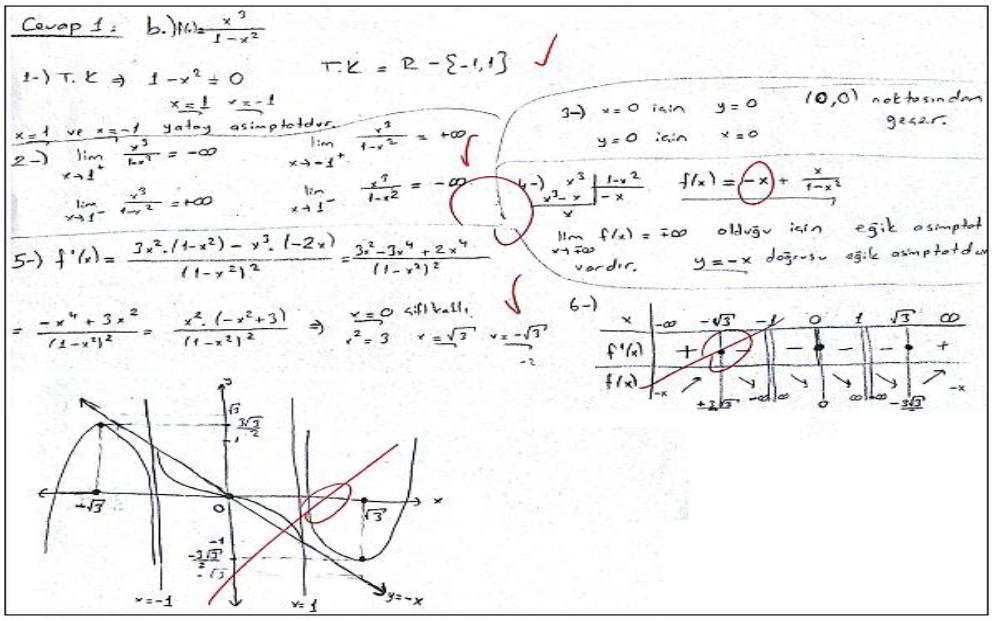

Figure 2. Failure to create table of signs by interpreting the data

Another type of error and mistake made by 9.83% of the preservice teacher when examining the function transformation was failure to determine convexity or concavity of a function. In the exemplary image above (Figure 2), it is also seen that the preservice teacher could not determine convexity or concavity of the function by utilizing the sign of the second derivative.

In this subtheme, another frequent error and mistake made by 8.65% of the preservice teachers was failure to find the domain of a function. Figure 3 presents the exemplary image of this error type from the exam paper of a preservice teacher.

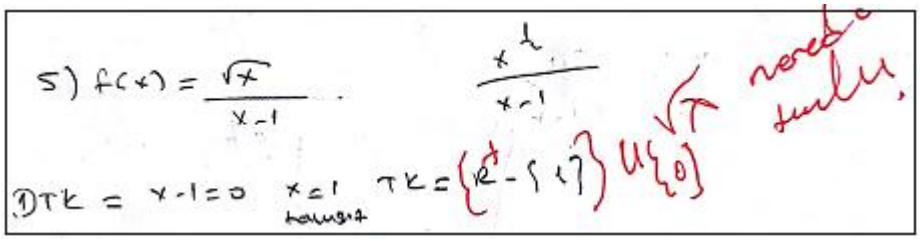

Figure 3. Failure to determine the domain

It was found that 7.7% of the preservice teachers could not interpret the double root. According to Figure 1, although the preservice teacher found the double root among the roots of the first derivative of the function, they could not interpret the double root when creating the table of signs and failed to create the table of signs.

Another error and mistake made by 7.08% of the preservice teachers was failure to find the intervals where the function is increasing and decreasing. Figure 4 presents the exemplary image of this error and mistake type from the exam paper of a preservice teacher.

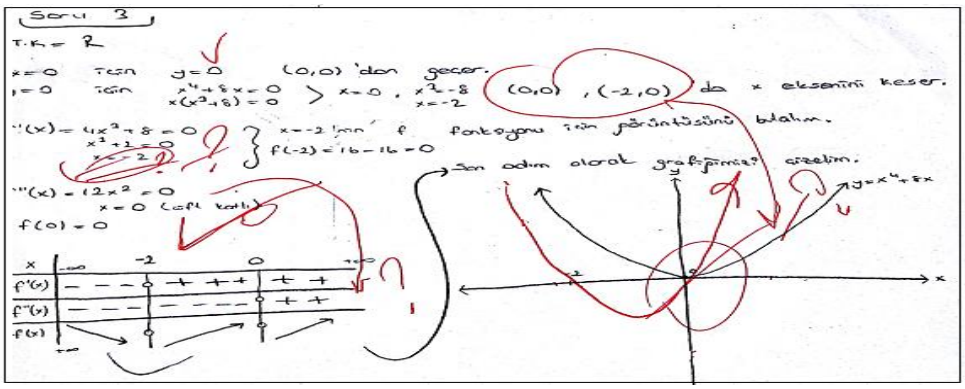

Figure 4. Failure to determine the intervals where the function is increasing and decreasing

Failing to interpret table of signs, and consequently, to draw the graph properly was another error and mistake made by 7.55% of the preservice teachers. Figure 5 shows the exemplary images of this error and mistake type from the exam papers of two preservice teachers.

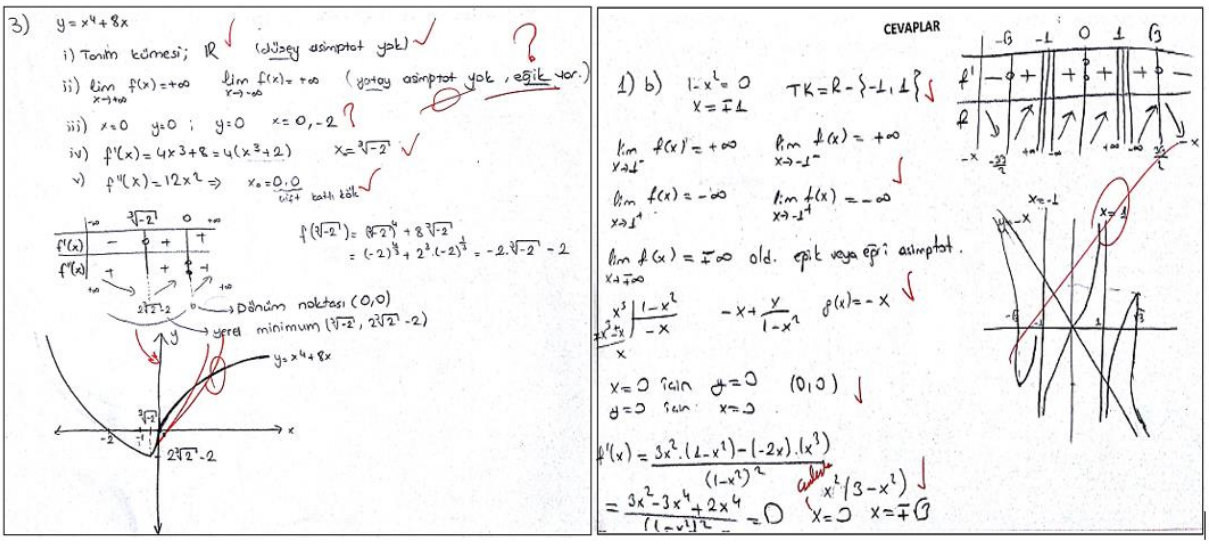

Figure 5. Failure to interpret table of signs

Another error and mistake made by 4.95% of the preservice teachers was failure to determine the asymptotes when drawing a graph. The exemplary images of this error and mistake type from the exam papers of two preservice teachers are presented in Figure 6.

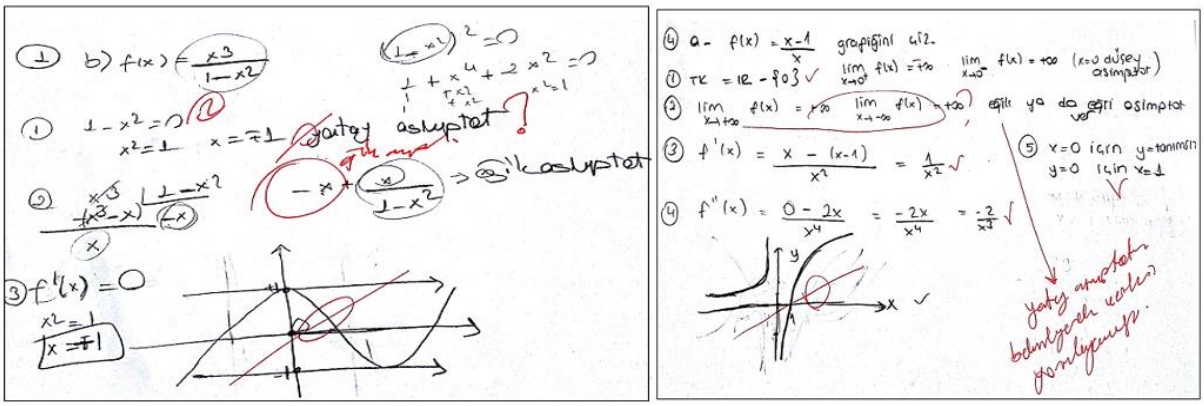

Figure 6. Failure to determine the asymptotes

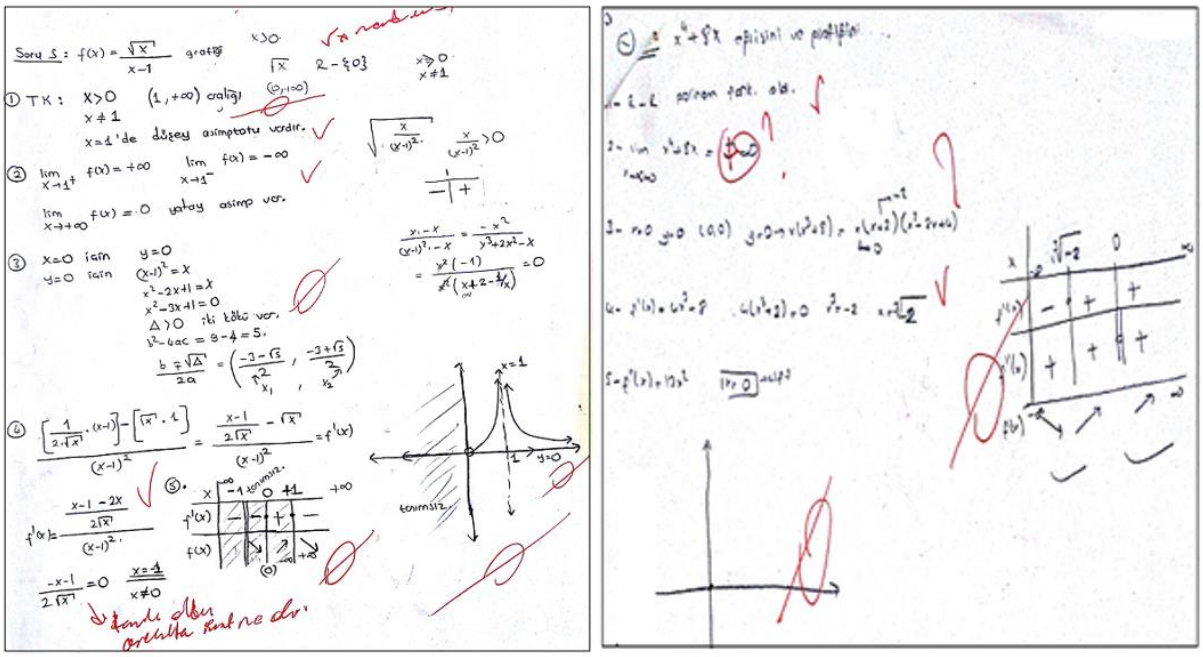

Figure 7. Failure to find function's points of intersection with the axes

Failing to determine function's behavior at extreme points of domain ends was another error made by 4.32% of the preservice teachers. Regarding this error type, as seen in the exemplary image in Figure 6, the preservice teacher could not determine the function's behaviors at extreme points of domain ends when finding the horizontal and vertical asymptotes.

Albeit low, 2.99% of the preservice teachers were found to make errors and mistakes in finding function's points of intersection with the axes. Figure 7 shows the exemplary images of this error and mistake type from the exam papers of two preservice teachers.

Other errors and mistakes under the theme of procedural errors and mistakes included making operational errors and mistakes when solving the questions (7.7%), failure to evaluate the limit (6.6%), failure to use mathematical statements (notations) properly (1.49%), failure to do transformations (1.18%), and failure to write a special function as a piecewise function (1.1%).

Exemplary images for the error in using mathematical statements (notations) properly from the exam papers of four preservice teachers are given in Figure 8.

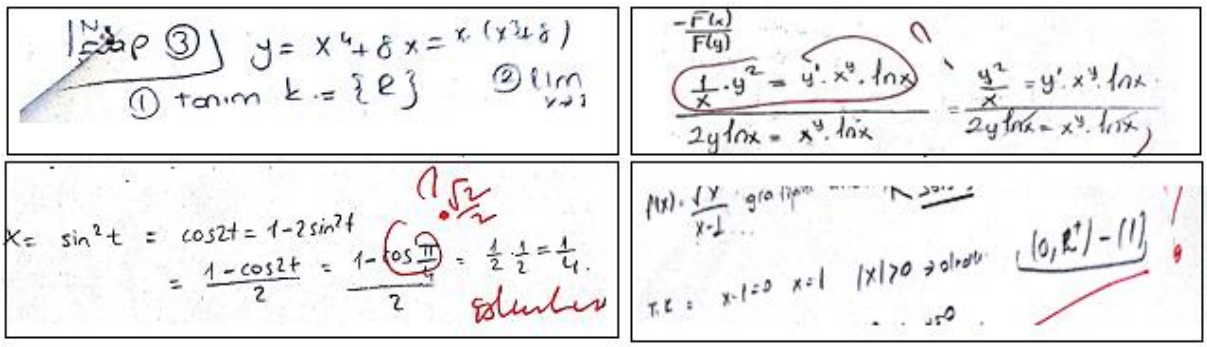

Figure 8. Failure to use mathematical statements (notations) properly

As for the errors categorized under the theme of conceptual errors and mistakes (Table 1), 6.22% of the preservice teachers overspecified the concept and 3.7% overgeneralized the concept.

Although overspecification of concepts had a lower rate among all types of error and mistake, it was found that the preservice teachers made errors and mistakes in 8 different types. The most frequent error and mistake made in overspecification of a concept was thinking of every function as a polynomial function when evaluating a derivative (3.3%), followed by considering finding an integral as evaluating a derivative (1.26%) and thinking of evaluating a limit as evaluating a derivative. For these three error types, Figure 9 and Figure 10 present the exemplary images from the exam papers of three preservice teachers.

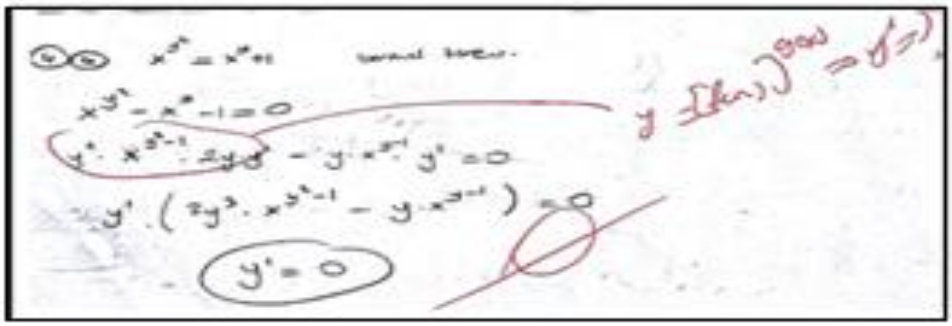

Figure 9. Thinking of every function as polynomial function when evaluating a derivative

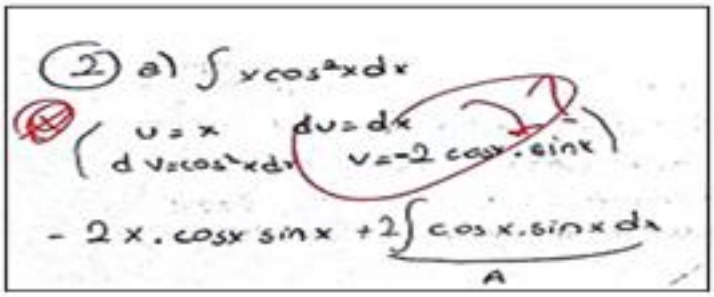

Figure 10. Considering finding an integral as evaluating a derivative

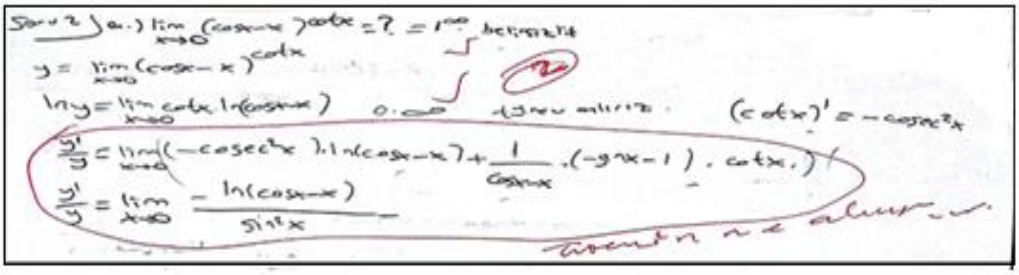

Figure 11. Thinking of evaluating a limit as evaluating a derivative

Despite a low rate for overgeneralization of concepts among all types of error, it was found that the preservice teachers made errors and mistakes in 11 different types. The most frequents errors and mistakes made by the preservice teachers in this type included thinking of a constant as a variable when evaluating a derivative (1.18%) and thinking of finding an integral of trigonometric functions as finding an integral of polynomial functions (1.1%). For these codes, Figure 12 and Figure 13 show the exemplary images from the exam papers of two preservice teachers.

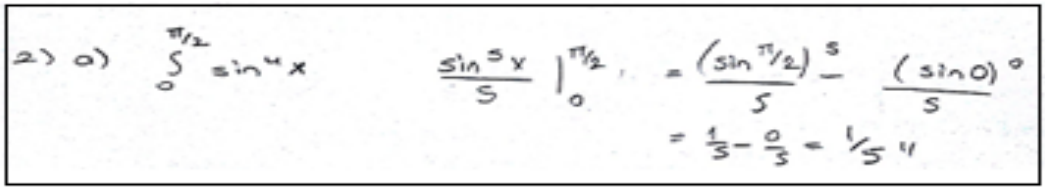

Figure 12. Thinking of finding an integral of trigonometric functions as finding an integral of polynomial functions

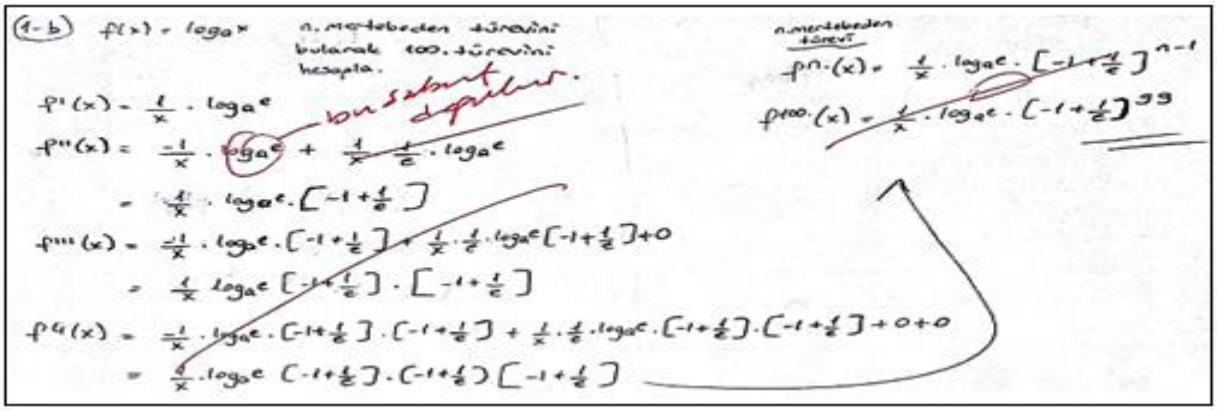

Figure 13. Thinking of a constant as a variable when evaluating a derivative

Following the procedural and conceptual errors and mistakes, another type of error and mistake made by the the preservice teachers was recalling the generalizations incompletely or incorrectly when solving the questions. 2.28% of the preservice teachers made this error and mistake by confusing the formula or the rule in the solution. Regarding these codes, the exemplary images from the exam papers of two preservice teachers are presented in Figure 14.

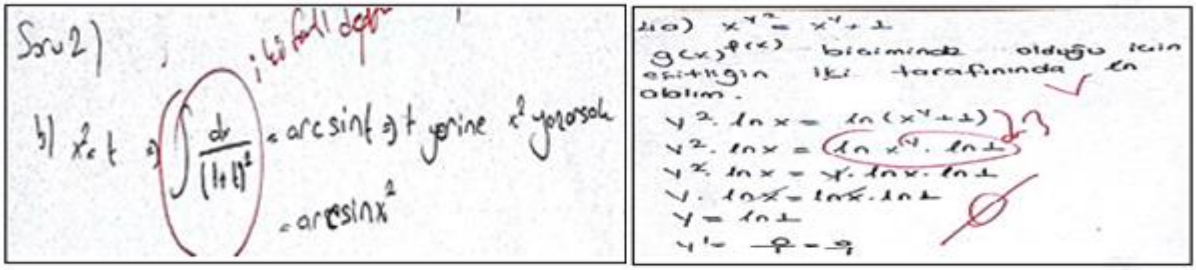

Figure 14. Confusing a formula or a rule

Discussion, Conclusion and Recommendations

In light of the findings achieved in the present study which aimed to identify the mathematical errors and mistakes made by preservice teachers in the Calculus I course, three types of error and mistake were observed: procedural errors and mistakes, conceptual errors and mistakes, recalling generalizations incompletely or incorrectly.

The preservice teachers made several procedural mathematical errors and mistakes when examining the function transformations. The errors and mistakes made by the preservice teachers when examining the change of functions included failure to create able of signs, failure to determine convexity or concavity of the function by examining the sign of the second derivative, failure to find the domain of the function, failure to interpret the double root among the roots of function, failure to interpret the sign of tables they created, failure to find the intervals where the function is increasing and decreasing, failure to determine the asymptotes, failure to determine function’s behavior at

extreme points of domain ends, and failure to find function's points of intersection with the axes. Based on those errors and mistakes overall, one can argue that the preservice teachers were lacking in procedural knowledge required for drawing the graph of a function. It is reported in the literature that undergraduates make several errors and mistakes when drawing graphs of functions. Those errors and mistakes include drawing the graph of functions as a point (Mevarech and Kramarsky 1997), representing a continuous data point-to-point or discrete data continuously (Brasell and Rowe 1993), and representing the data that should be represented in a single graph by drawing separate graphs (Kramarski 2004). Furthermore, Sierpinska (1992) states that students experience difficulties in subjects such as domain, range, and image of function; inverse function; concept of variable, dependent and independent variables; coordinates; graph, table of function, and function rule. Given the results achieved both in the present study and the literature collectively, procedural and conceptual difficulties experienced by students about the concept of function have an impact on the mathematical errors and mistakes in other subjects of the Calculus course.

In the study, procedural errors and mistakes made by the participants included making operational errors and mistakes when solving the questions, failure to use mathematical statements (notations) properly, failure to do transformations, and failure to write a special function as a piecewise function. Despite being at a lower rate, interestingly, the error "failure to use mathematical statements (notations) properly" was observed for 19 times. Anyone who perform mathematics should be properly using established statements in the field of mathematics. One important reason for this error might be the experiences of preservice teachers prior to the undergraduate education (primary, secondary, and high school). Thus, mathematics teachers should take care to use mathematical concepts or expressions correctly in the teaching process.

The conceptual errors and mistakes observed in the study were grouped under two categories of overspecification and overgeneralization of a concept. Overspecification is the use of a rule, principle or concept by reducing it to a limited comprehension whereas overgeneralization refers to thinking as if a certain rule, principle or concept was taught in other classes, too (Özmantar, Bingölbali and Akkoç 2013). It was observed that the preservice teachers made several errors and mistakes by overspecifying and overgeneralizing the concepts in the solutions. The most frequent errors and mistakes made in overspecification of a concept included thinking of every function as a polynomial function when evaluating a derivative, considering finding an integral as evaluating a derivative, and thinking of evaluating a limit as evaluating a derivative. The prominent errors and mistakes in the category "overgeneralization of a concept" included thinking of a constant as a variable when evaluating a derivative and thinking of finding an integral of trigonometric functions as finding an integral of polynomial functions. It was also found that the preservice teachers made several other errors and mistakes in overspecification and overgeneralization of a concept. There might be many reasons for such errors and mistakes made by the preservice teachers. For instance,

they might have chosen to memorize information on each concept rather than learning basic properties of mathematical rules, principles or concepts and correlating the concepts with each other. Indeed, one of the most important errors and mistakes was that the preservice teachers recalled generalizations incompletely or incorrectly as they confused a formula or a rule. Thus, when teaching the Calculus course, subjects should be taught in consideration of such errors and mistakes that could be made by students.

Consequently, how the preservice teachers made several mathematical errors and mistakes, both procedurally and conceptually, indicates that they do not have the adequate procedural and conceptual knowledge on mathematical concepts. This might also affect whether they prove theorems properly and understand the proofs of the data in the Calculus course. Jones (2000) and Weber (2001) state that preservice mathematics teachers and undergraduates find it difficult to provide and understand proofs in undergraduate courses. To overcome such challenges, it is important for lecturers to address concepts and operations by turns during the Calculus courses in consideration that conceptual and procedural knowledge are not independent from each other, and in the contrary, they reinforce each other. Only then, a balance can be struck between conceptual and procedural knowledge.

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Educational Policy Analysis and Strategic Research, V17, N1, 2022
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Language Worldview and Action-Oriented National Folklore Elements Approach for Teaching Turkish as a Foreign Language

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Abstract

Linguistics studies have always influenced the field of foreign language teaching. In the 20th century, structuralism prevailed in linguistics. While language is a communication tool, language is also a structure that is formed and developed within the framework of its system. A great deal of important research has been done on these ideas. In addition, new methods and approaches inspired by the same ideas have emerged in foreign language teaching, influenced by linguistics and sub-fields of linguistics. However, the anthropological perspective observed in all fields of science in the last years of the 20th century paved the way for important studies focusing on the cultural studies approach. An applied scientific field of study inspired by the cultural studies approach is cultural linguistics. Country linguistics, a sub-field of cultural linguistics, is an applied field that researches the methods used in teaching a language as a foreign language. In this context, country linguistics has been studied based on the language worldview. Afterwards, the definition of national folklore elements in teaching Turkish as a foreign language was examined within the studies carried out in Western Europe. As a result, teaching Turkish as a foreign language is also accepted as cultural diplomacy. In order to reach a unique approach in this field, the basic principles of the action-oriented approach to national folklore elements were discussed.

Keywords: Cultural linguistics, Teaching Turkish as a foreign language, Cultural diplomacy, National folklore elements.

DOI: 10.29329/epasr.2022.248.16

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Introduction

The anthropological perspective observed in all branches of science in the last years of the 20th century paved the way for important studies focusing on the cultural studies approach in all fields, especially social sciences and educational sciences. It is seen that Russian linguistics researchers, who can be said to have stayed away from the structuralism movement, especially in the field of linguistics, have achieved significant results in their studies in the field of language. It is observed that the basis of these studies, which draw attention to linguistics, philology, and teaching a language as a foreign language based on the anthropological point of view, focuses on the interaction of language-thought-culture. In the century we live in, it can be said that there are important changes in the field of acquisition of a language as a mother tongue and teaching it as a foreign language, from an anthropological point of view.

According to Gökberk (2018), language has a three-dimensional structure. This structure called physical, spiritual, and meaning dimensions, is valid for all languages. The sounds and fluctuations we make while speaking form the physical structure of the language. This structure of the language begins to function to understand the speech, that is, to send the message to the other party. This structure can be seen as the first element that initiates mutual agreement and understanding. However, it is not enough to hear the voices to achieve the agreement. It is essential to perceive, experience, and make sense of these sounds. At this stage, the spiritual and meaning dimension of the language comes into play. Thus, hearing sounds and making sense of these sounds can be accepted as functions of different structures in language. Therefore, it can be said that the spiritual and meaning dimensions of the language act together. Although the meaning of the sounds brings the spiritual dimension into action, an inadequacy is observed in this case. In this context, it is necessary to think about the meaning dimension of language. *"Meaning does not depend on a specific time dimension; it transcends time and space"* (Gökberk, 2018, 70). For this reason, it is seen that language has a way of thinking and valuation. The aspect of thinking and valuation present in language indicates that language is closely tied to culture. When it comes to the mother tongue, it can be said that a baby acquires language on the way to adulthood, thus internalising the thinking and evaluation aspect of language. It cannot be said that the baby who starts to analyse and use the physical dimension of the mother tongue, namely the sound structure, is a complete language user. In order to internalise the spiritual and meaning dimensions of the language, it is necessary to gain life experience in the native language speaking community. In other words, it needs to initiate and maintain the formation process in the society's culture to which it belongs. *"Being human; means to have a share in culture and civilisation and to a large extent, it means establishing a relationship between language and existence"* (Bayraktar, 2013, 21). For this reason, it can be said that acquiring a mother tongue also includes the process of being human, that is, the process of directing one's existence towards a meaningful existence. In this process, it is seen that it is vital for the individual to learn his mother

tongue, use it correctly and meaningfully, and grow up with a share of the culture and civilisation he lives in, that is, to feel belonging to that culture. Thus, the individual begins to impersonate a real language user. In the process of acquiring the mother tongue, what kind of difficulties might the individual encounter when they want to understand, learn or express themselves in a foreign language?

Cultural Studies from the Language Worldview

It can be said that the boundaries separating mother tongue teaching and foreign language teaching, mother tongue acquisition, and foreign language acquisition are hidden in the difficulties faced by the individual in these processes. In other words, it is thought that the difficulties faced by the individual in the process of acquiring a mother tongue, the teacher in the process of teaching the mother tongue, the difficulties faced by the individual in the process of acquiring a foreign language, and the teacher in the process of teaching a foreign language are quite different from each other.

> *"We read the words of the original text over and over in order to penetrate them, to tap into the idea or experience that brought them out. Then we gather up what we find there and take this shaky, almost wordless "thing" and put it behind the language that needs to be translated. Now the real challenge is to convince the host language to accept and host "this thing" waiting to be verbalised" (Berger, 2016/2017).*

Berger (2016/2017) describes the words of a text she encounters in a foreign language as "shaky, almost wordless" in her work, in which she narrates her translation experiences. In this context, it is seen that a knowledge of the dictionary meanings of words is not enough to understand these words because the words belonging to a language are also the carriers of the thought system of that language, and therefore the culture, which came from centuries ago. Based on this sentence from Berger (2016/2017), it can be concluded that we may encounter significant difficulties in the process of making sense of the text we read when we do not know the main concepts, ideas and experiences that make up words in a language and enable them to live. It is the native language of what Berger calls the host language. The host language can sometimes have difficulties when faced with a guest language that it has to host. Hosting a guest language is the use of a language that a person does not know that can cause problems to arise. Based on the idea that language is not a list of words, it can be said that the meaning of the word is lost when the concept behind the word and its cultural origin is foreign. In his letter to Wolf, Humboldt mentions that languages are not born on their own; they develop according to the characteristics of the cultural environments they are connected to, and the ability to speak in human beings develops with the spiritual power found in nations, especially with

the power of thought (Akarsu, 1998). Thus, languages can be considered the most important part of the culture in which they develop, which is in constant motion. The reality that language, thought, and culture are inseparable can also make it easier to perceive why languages have distinctive features. For this reason, it can be said that languages have distinctive features in terms of their structural features, such as the alphabet and affix-root system and the spirits of the societies they belong to, as well as speaking and writing them. *"A language gives people another way of thinking, another way of seeing (Akarsu, 1998, 63).* Based on this idea, learning a language is also about thinking and feeling in that language. Acquisition of a mother tongue occurs naturally within the society, hence the culture to which the individual belongs. For an individual who thinks in their natural environment and develops in their own culture, there is nothing "foreign" in this natural process.

"The way of thinking of the speakers of a language, their philosophy of life, and their attitudes towards events are directly reflected in the language. On the other hand, language also shapes people and determines their way of thinking" (Akar, 2019, 18).

For this reason, in a language, it can be thought that the speakers' worldview of that language is hidden. But, at the same time, it can be said that the world view of the society speaking that language also shapes that language.

This interaction between language and worldview is closely related to linguistics and foreign language teaching. Based on this view, various new sub-fields have emerged in educational sciences, social sciences, and linguistics. Among these new fields, cultural studies draw attention. Cultural studies, which adopt an interdisciplinary method, deal with human, language, thought, behaviour, and cultural interaction. This field, which is also called cultural studies in the field of social sciences, deals with the way people shape and experience their life culturally and socially (Bourse &Yücel, 2017). Therefore, within the limitations of this study, this fieldwill not be mentioned. However, cultural linguistics, which is highly influenced by this new field and accepted as a sub-field of linguistics, will be discussed in its effects on foreign language teaching. For this reason, it should be noted that cultural studies and cultural linguistics are separate study subjects.

Alimjanova (2016) states that cultural studies and cultural language are different fields. According to Alimjanova (2016), while cultural studies focus on the formation and development of culture and its effect on human actions, cultural linguistics examines the language accepted as a transfer of cultural information and the culture formed through language. In this context, Bogdanovic (2014) underlines that cultural linguistics should not be confused with the field of study of ethnolinguistics. In order to avoid any further confusion, Bogdanovicstates that ethnolinguistics, like ethnolinguistics, is not only concerned with the diachrony of language, culture, and human relations but is a field that focuses explicitly on the simultaneity of this relationship (Bogdanovic, 2014). For this reason, it can be said that the tendency to focus on the cultural codes of the individual who

constructs this communication, rather than focusing on the communicative act of language, can be seen in cultural linguistics studies. Although the study subjects of the mentioned fields differ from each other, it is seen that the common point of view is the language worldview.

It is considered that studies based on language worldview in linguistics and foreign language teaching also criticise the idea that language is a system, a structure in itself, as an incomplete perspective in structuralist studies. However, at the same time, the language worldview does not define language only as a means of communication. "Language worldview is the sum of knowledge that has cultural value and is transmitted from generation to generation" (Alimjanova, 2016). Based on this definition, for language to provide communication between people, it must first be seen as a tool that conveys the shared cultural values that make this communication possible. Perhaps, for this reason, Gorobets(2014) defines language worldview as the knowledge that constitutes all linguistic forms and perceives the world by separating it into components based on this information. This situation reveals that people perceive the world based on their cultural values and naturally express this perception through words created from their cultural values. In this context, it can be said that all of the national folklore elements in their mind are activated in perceiving the world. At the beginning of this section, Humboldt's philosophy of language studies is the basis of the language worldview playing an active role in linguistics and foreign language teaching. In addition, Saphir and then Whorf (Başkan, 1984) also underline that language is not just a means of communication by mentioning that each language reflects the world differently. Language is accepted only as a communication tool, making it very difficult for those who use the target language to acquire any language as a foreign language. In the context of language worldview, acquiring a foreign language and memorising the words belonging to that language by listing seems to be a competence beyond learning the structural features of that language.

It can be said that the acquisition of a foreign language can only be achieved by trying to comprehend the world that words reflect with the national folklore elements they carry behind them, to make sense of the secrets in the structure of the language, and thus to understand the culture reflected by the language. As mentioned before, native speakers do not feel alienated from the national folkloric elements of their mother tongue, as they are kneaded with the culture of the society; they live in the process of acquiring their mother tongue. However, in acquiring an unknown language with an additional lack of any societal or cultural knowledge relating to that language, one encounters significant difficulties in the foreign language teaching processes where suitable approaches and methods are not used. In this context, the importance of using national folklore elements in foreign language teaching also emerges.

Elements of National Folklore and Foreign Language Teaching: From Western European Studies to Country Linguistics

The field of foreign language teaching, influenced by both language philosophy and linguistic studies, has sought new methods and approaches for centuries. The field of foreign language teaching, which is also affected by various political and social thought movements, has carried out important studies to minimise the difficulties faced by the learner and the teacher in learning a foreign language. Before mentioning these studies, it should be mentioned that teaching any language as a foreign language is accepted as a cultural diplomacy activity in the current century (Ateş, Köktürk& Barut, 2016). Cultural diplomacy, which uses a country's language, national folklore elements, and cultural values to attract target countries, is one of the most critical components of public diplomacy. Teaching a country's language as a foreign language and transferring national folklore elements in this process is also accepted as a soft power use that significantly contributes to the nation branding process (Nye, 2005). This view also paved the way for the emergence of an action-oriented approach based on the connections established between language, thought and culture in foreign language teaching, called cultural diplomacy in Western Europe.

The definition of the action-oriented approach and the recommendation of international criteria for teaching any language as a foreign language was realised with the Common European Recommendations Framework for Languages in 2001 (TELC, 2013). In this study, which brings new concepts and a new perspective to foreign language teaching, a foreign language learner is defined as a language user and a social actor. This new approach considers knowing any foreign language as understanding the discourses produced by the target society by the language level and creating discourse in the target language. Within the framework of this new approach, the language used is expected to be a social actor that fulfils all kinds of linguistic and cultural tasks and can almost act as a part of the communication network of the society where one learns the language.

> *"Language users and learners are primarily social actors; that is, it is an action-oriented approach in general, since it treats the members of the society assuming non-linguistic, communicative tasks in certain conditions, in certain environments and certain areas of action"* (TELC, 2013, 18).

For this reason, the European Common Recommendations Framework for Languages (TELC, 2013) defined and discussed in detail the cultural competencies of a community speaking a language and teaching any language as a foreign language, as general cultural knowledge, social knowledge, and intercultural knowledge. In the context of the frame text, general cultural information includes encyclopaedic information about the countries that speak the target language. For example, historical, economic, geographical, and political information of a target country's historical and current figures considered important in society are included in the foreign language teaching process curriculum.

Social knowledge includes all national folklore elements of the society speaking the target language. This information, which has a very important place in the framework text, is divided into various components: traditions, national and religious holidays, celebrations, daily life information, interpersonal relations, rituals, belief systems, communication between institutions in society, and folk literature elements that can be counted among the most important of these components. (Fisekcioglu, 2019). Intercultural knowledge can be defined as an effort to establish a connection between the individual's own culture and the target culture in learning the target language.

After the publication of the Common European Framework of Reference for Languages (CEFR), two more reference texts were published in 2018 and 2020 under the Extended Edition of the Common European Framework of Reference for Languages (CEFR, 2018). These texts are not mentioned in detail within the scope of the study's limitations. However, in both texts, regulations and innovations closely related to this study's subject stand out. In these texts, which have not yet been translated into Turkish, the inclusion of the culture of the target language in the foreign language teaching curriculum within specific criteria, from the lowest language level to the most advanced language level, has been discussed within the scope of mediation skills (CEFR, 2018). Some of these can be listed as the competencies of exploration of multicultural repertoire, personal reactions to the effects of creative texts including literary texts, examining and criticising creative texts including literary texts, mediating in communication, and mediating a concept. In particular, in the expanded edition published in 2020, framework writers underline that in order to connect with the target language, cultural knowledge of the target society, namely national folklore elements, should be included in the curricula prepared for foreign language teaching (CEFR, 2020). Cultural competencies and their components, which have a very important place in the expanded editions of the framework text. They are the basis of all the teaching materials to whichEuropean curriculums add their own culture (within certain academic criteria)in order to create an accurate and beneficial teaching process while teaching its language as a foreign language. It appears to have been prepared from this point of view. Thus, the action-oriented approach, which is accepted as a contemporary approach to foreign language teaching, is evolving towards an approach fed from the language worldview and requires the transfer of national folklore elements, especially within the scope of the published texts.

From Cultural Linguistics to Country Linguistics

While the Western world carries out these studies in foreign language teaching, the Russian linguistics community carries out studies based on the language worldview created under the name of cultural linguistics, influenced by philological studies in the field of cultural studies. Cultural linguistics, which was discussed in detail in the previous section, draws its boundaries with precise lines and inspires the emergence of a new field of linguistics.

> *"Besides the meanings of the words in the learned language and grammar rules, it is necessary to know when, where, to whom and how to speak/write in the world of that language, and how the contextual/conceptual aspect and essence of an idea emerges"* (Alimjanova, 2016, 51).

Based on this definition, it would not be wrong to interpret the acquisition/learning of a language as a foreign language as an understanding of the essence of that language.

Based on the linguistic worldview, this approach has also led to the emergence of a new applied linguistics field called geolinguistics in the Russian linguistics environment.

> *"Country linguistics is a field that covers foreign language teaching and gives information about the country of the language taught. The main purpose of country linguistics is to try to explain exactly what the person speaking in a foreign language means and to provide intercultural communicative competence by aiming to be understood"* (Alimjanova, 2016, 39).

Country linguistics is an applied discipline that conducts research within the framework of language education theory and is accepted as a branch of linguistics. This field, which emerged with the work of YE.M.Vereşçagin and V.G.Kostomarov, is the name given to the field of teaching the Russian language as a foreign language. Country linguistics can also be considered as a product of the studies of the Russian linguistics circle, which was inspired by the cultural approach. In the current century, its difference from other theories used in teaching a language as a foreign language is anintroduction, use, and reinforcement of national culture information (Kozan, 2014). Country linguistics, which offers a model within the framework of teaching Russian as a foreign language by Russian linguistic circles, draws attention with its approach based on language worldview and studies that care about transferring the national folklore elements of the societies speaking the target language in foreign language teaching. Country-linguistics, which emerged from the accumulation of linguistic studies based on language, thought, and cultural interaction, is a science that adopts a communicative approach, develops foreign language teaching methods, and adopts linguistic units at different levels as a research subject (Zinovieva, 2014). For this reason, country linguistics differs from cultural linguistics, which is another branch of linguistics in terms of its definition and research area. However, it can be said that cultural linguistics can also form a theoretical basis for country linguistics (Zinovyeva, 2014). According to country linguistics, words are accepted as a language material that reflects the target language-speaking society in the foreign language teaching process (Alimjanova, 2016). Based on the language-thought-culture interaction, it is thought that words are important elements that carry culture. According to the country linguistics method, country linguistics founders Vereşçagin and Kostomarov state,"According to the Country linguistics method, a person can only absorb a foreign language and become involved in a new culture and reach the high spiritual

richness hidden in the learned language" (Act. Alimjanova, 2016, p. 39). One of the most important goals of country linguistics is to provide intercultural communicative competence. Within the scope of this purpose, it is essential to share the knowledge of the target culture in foreign language teaching. However, the main purpose is to teach a foreign language. (Alimjanova, 2016).

As a result of these studies carried out in the Russian linguistics environment, it can be said that foreign language teaching has been carried out with a consciousness based on the language-thought-culture axis since the first years of the 21st century. However, it is also very important to define thought and culture in foreign language teaching. *"Culture in foreign language teaching is no longer intellectual gymnastics or a literary culture"* (Puren, 1991, 97). Based on this definition, it would not be correct to talk about a content that contains only general cultural knowledge of the target language, in other words,encyclopaedic knowledge, under the name of cultural transfer in the methods and approaches prior to the action-oriented approach in the history of foreign language teaching. This point of view is discussed in detail in the European Common Recommendations Framework for Languages (CEFR, 2001) with its components as general cultural knowledge content, social knowledge content, and intercultural knowledge content of the target language. In addition, within the scope of mediation skills briefly mentioned in this section, the cultural content of the target language that should be conveyed is also included in the Extended Edition of the Common European Framework of Reference for Languages (CEFR, 2018). Therefore, in the common view of both the first framework text and the two additional texts subsequently published, it can be said that the targeted achievement in teaching a foreign language is to reach the discursive proficiency appropriate for the language level. Discursive competence, which is defined as perceiving a discourse in the target language by the language level and being able to create a discourse in the target language by the language level, can be defined as the learner's development of the process of being a language user and a social actor in four language skills. This point of view shows that the language that carries and transmits cultural values, namely national cultural elements, is also the carrier of all the identity information of the target society. Günay (2016) always associates this connection of discourse with culture with the use of language in a context.

Action-Oriented National Folklore Elements Approach in Teaching Turkish as a Foreign Language

Studies conducted in the 21st century show that the transfer of cultural content of the target language in the field of teaching all languages as a foreign language has an important role both in the achievement of the discursive competence of the language learner and in the development of linguistic competence by meeting the values of the target society. Regarding studies in the field of foreign language teaching, from the language worldview of the Russian linguistic community to studies carried out in Europe to carry out foreign language teaching within certain criteria, and from the principles of the action-oriented approach adopted in the 21st century to the intercultural

approach, the common denominator is that a foreign language is a foreign language. Therefore, it is seen that there is an approach that focuses on the inclusion of the target culture in the curriculum with all its components in teaching as a language.

> *"Language is a powerful social tool that transforms masses of people into society, reveals the nation through the preservation and transmission of culture, traditions and self-consciousness of communities with the same language, and keeps track of the efforts of human beings to understand the universe and itself and to clarify the life they lead in this universe for many years."* (Keskin, 2020, 764).

Based on this definition, it can be said that teaching a language as a foreign language also means teaching it by accounting for all the national folkloric elements that that language carries.

It seems important to examine the concept in detail when it comes to the intercultural approach. In this context, Porcher (1995) underlines that in foreign language teaching, the learner must have cultural competence in order for intercultural awareness to be formed in the learner. However, the components that make up this cultural competence are not limited to the encyclopaedic cultural knowledge of the target language-speaking society (Peytard&Moirand 1992). It is essential to convey the knowledge of society, which includes original behaviours and attitudes in daily life, to facilitate understanding and even penetrate the target society in foreign language teaching (Porcher, 2004). In this context, it is necessary to remember the concept of duty, one of the essential concepts of the action-oriented approach. In the framework text, a task is explained as any action the learner takes to achieve a specific goal in the target language (TELC, 2013). In other words, the task can also be called the competence of transforming the linguistic performance of the learnerwho has reached linguistic competence within the limits of their language level into communicative performance. For the learner to take action in the target society as a social actor, it is not sufficient to have a command of the linguistic content of the target language. The learner needs to reach discursive proficiency by his language level.

On the other hand, discourse contains both linguistic and cultural elements (Kramsh, 1994). In this context, culture is a guide that shows how to behave, speak, writeandunderstand. Rather than an encyclopaedic knowledge that the learner should memorise in the foreign language teaching process, it is knowledge that sheds light on the learner's way to reach discursive competence.

As in teaching all languages as a foreign language, to transfer this knowledge to the learner in the teaching of Turkish as a foreign language, national folklore elements must be included in the curriculum and four language skills.

> *"In the book published under the title, General Opinions on Our National Cultural Elements by the Atatürk High Council of Culture, Language and History, our national cultural elements are identified as follows: Language, history, religion, science, intellectual culture and technology, art (book arts in our national culture, classical Turkish music), contemporary music, folk music, architecture, literature, theatre), customs, customs, traditions, folklore, morality, law, understanding and state structure, agriculture, military service, sports and press-publication"* (Şengül, 2020, 23).

The national folklore elements listed in this definition show a remarkable similarity with the elements that suggest that Western Europe should be included in the curriculum under the name of sociocultural knowledge while teaching its language as a foreign language (TELC, 2013). From this point of view, it can be said that in the process of learning any Western European language, students master almost all the national folklore elements of the target society within the limitations of their language levels.

Studies conducted in Western Europe and the studies conducted by the Russian Linguistics circle in the field of country linguistics not only mention that the cultural content of the target society should be present in foreign language teaching but also support the emergence of multi-methodical approaches in which more than one method is used together. For example, Puren (2020) explains multi-methodism by giving an example of a dinner plate. It reminds us that a meal consists of ingredients cooked together, not only the presence of different vegetables and meats on the plate. She attributes the meal's success to the fact that the ingredients are mixed and that there is not only the presence ofmixed ingredients on the plate. For this reason, it seems to be a very erroneous attitude to think of multi-methodism as a variety of methods that express mixed, interspersed, variable, and indecisive attitudes like the food on the same plate. Instead, multi-methodism is a strategy that combines simultaneous, collaborative, self-consistent methodological matrices to create a new consistency (Puren, 2020). For this reason, it is essential that the action-oriented approach used in foreign language teaching in the 21stcentury should be reviewed and renewed in the field of teaching Turkish as a foreign language, based on the concept of multiple methods, and that it guides scientists to search for original methods suitable for teaching the Turkish language.

In the context of language-culture connection and cultural competencies, the inclusion of national folklore elements in method books and curricula as a consistent, standardised, and meaningful whole in the teaching of Turkish as a foreign language means that the learner achieves discursive competence in being a language user and a social actor, as well as in the previous section. It is seen as an inevitable necessity in terms of cultural diplomacy activity. Considering that cultural competencies are not only a cultural encyclopaedic knowledge of the target society, examining and interpreting the national folklore elements in their content and transferring and sharing the four

language skills to those who learn Turkish as a foreign language seems necessary for the context of multi-method contemporary approaches.

> *"According to the teachers' opinions, it has emerged that the content in the textbooks should be enriched and more subjects that describe and convey Turkish culture should be included in the textbooks. In this context, it has been expressed as an opinion that the texts describing Turkish scientists, Turkish-Islamic elements, cultural pictures in course materials, the necessity of reflecting daily life in the materials should be given more place to clothing, food and architecture in the texts and the visuality should be brought to the fore.* (Moralı&Göçer, 2019, 1126)

Contemporary international studies and research mention that the learner's formation and development of cultural competencies can only be formed by transferring actual cultural content. In this context, the cultural competencies of the target language consist of national folklore elements belonging to the society that speaks that language. Actual national folklore elements are the data obtained from folklore studies. It is also seen that sharing and transferring these data can only be possible through interdisciplinary studies. Therefore, the method by which national folklore elements will be selected, conveyed, and shared is excluded from this study's scope.

Considering the European Qualifications Framework for Languages and the studies carried out by the Russian Linguistics circle in the field of country linguistics, it is expected from the learner in the process of teaching Turkish as a foreign language to not memorise the knowledge of Turkish culture but to act with the national folklore elements that make up Turkish culture. Therefore, Porcher (1995) defines cultural competencies as the ability to develop and take joint actions according to contextual values. This definition also includes the concept of task specified in all three editions of the European Qualifications Framework for Languages (CEFR 2018, 2020; TELC, 2013). Thus, those who learn Turkish as a foreign language are expected to use the Turkish language based on Turkish culture in four language skills by their language level. For this reason, it seems very important to consider the elements of national culture in an action-oriented manner and to include them in the curricula prepared for teaching Turkish as a foreign language with a viewpoint suitable for the concept of duty. It is thought that this approach, which we can call the action-oriented national folklore elements to approach, can reveal a perspective that covers all the linguistic and cultural characteristics of Turkish and the Turkish world. Therefore, in the process of teaching all languages as a foreign language, it is seen that the structure of the language is included in the curricula together with the cultural structure of the society. In this situation, it is observed that studies in the field of foreign language teaching are carried out within the scope of original approaches based on international methods but suitable for the target language and culture. For this reason, it seems very important to adopt an approach based on contemporary approaches but specific to Turkish in the field

of teaching Turkish as a foreign language. In addition, through the process of teaching Turkish as a foreign language, knowledge of the Turkish world would be transferred to the students. In other words, the encyclopaedic knowledge of the Turkish world and the knowledge of the Turkish society shared, by referring to folklore sources, can be considered as an important step. For this reason, the field of teaching Turkish as a foreign language and the field of folklore seem to be two fields that feed into each other and should be evaluated from an interdisciplinary perspective. The basic principles proposed for this approach, which we can call the action-oriented approach of national folklore elements, can be listed as follows:

- Evaluation of cultural content in the process of teaching Turkish as a foreign language, based on two different definitions as an encyclopaedic knowledge of Turkish culture and knowledge of Turkish society (Fişekcioğlu, 2019),
- Preparation of encyclopaedic knowledge of Turkish culture and knowledge of Turkish society in a way that covers all Turkish states,
- Encyclopaedic knowledge of Turkish culture and knowledge of Turkish society includes not only historical but also contemporary information about the present,
- Paying attention to the equal presence of encyclopaedic knowledge of Turkish culture and knowledge of Turkish society in both method books and prepared curricula,
- Selection of encyclopaedic knowledge of Turkish culture based on studies in fields such as literature, history, and philosophy,
- Preparation of Turkish society knowledge in the context of national folklore elements, based on folklore data,
- Turkish national folklore elements are not considered as cultural knowledge to be learned or memorised in the process of teaching Turkish as a foreign language,
- Turkish national folklore elements are not considered as the fifth skill in addition to reading comprehension, writing, listening comprehension, and speaking skills in teaching Turkish as a foreign language,
- Turkish national folklore elements are not evaluated in the form of touristic brochures or advertisement texts in the books used in the process of teaching Turkish as a foreign language,
- Paying attention to sharing the elements of Turkish national folklore in teaching Turkish as a foreign language through the original texts used in the materials aimed at

developing the skills of reading comprehension, writing, listening comprehension, and speaking in the learner,

- Observing the cultural components of the action (in other words, all the activities included in the method books) in reading comprehension, writing, listening comprehension, and speaking skills,
- Preparing and evaluating the student's mastery of national folklore elements in the perception of discourse (understanding listening and reading comprehension) and production of discourse (speaking and writing) within the scope of language levels,
- Preparing sociolinguistic content with a perspective based on an encyclopaedic knowledge of Turkish culture and Turkish social knowledge,
- It is suggested that national folklore elements should be carefully chosen within cultural diplomacy elements.

Discussion, Conclusion and Recommendations

> *"Thinking is making connections between beings. This process takes place not with the entities themselves but with the concepts that are their imaginations in mind. Recognising what it is acquiring its concept. People give names to the concepts they know. Thus, nouns, i.e., words, take the place of existing ones. These names make up the language. In that case, language represents the existing ones due to the concepts in mind"* (Öner, 2013).

Based on this idea, it can be said that language is a memory card that carries all the information about our identity. This memory card, which has unlimited capacity, contains elements of national folklore that have formed and developed the language for centuries. This memory card also renews and updates itself in light of social and cultural changes. This update also reminds us of the distinction that ZiyaGökalp (Gökalp, 2014) made years ago between the concepts of civilisation and culture. In the current century, this concept, which is called intercultural competencies in foreign language teaching, is an indispensable requirement for understanding and being included in civilisation and can also be considered as the first step in understanding the target culture while learning a foreign language. However, incorporating culture into the course materials prepared solely based on the concept of interculturality prevents the student from reaching the discursive proficiency required by the language level and directs them to prepare content incompatible with the general objectives of foreign language teaching. This is because, as in all other languages, teaching Turkish as a foreign language is accepted as a cultural diplomacy activity (Ateş et al., 2016). This activity is a study that deserves careful attention because when societies evaluate other societies differently, they

start from a stereotypical, unproven indicator called a stereotype. Turkish society, like other societies, has an image created through these indicators. Therefore, it is essential that teaching Turkish as a foreign language is used correctly to replace cultural evaluations due to misunderstandings and sometimes bad intentions with correct cultural knowledge.

Calling Turkish a "target language", as it is called in foreign language teaching, leads us towards an incomplete approach. Naming Turkish as a "host language" instead of naming it as a target language and thinking that "we host another language and another culture" in teaching Turkish as a foreign language may lead us towards a more original approach in teaching Turkish as a foreign language. In our ancient culture, it is known how decadent the treats are when welcoming guests. In this context, by teaching Turkish as a foreign language, it seems very important not to forget that we teach a language formed by the national cultural elements that belong to us, to be aware of the language and culture we host as guests, and to "what content" we serve prepared in our kitchen to the language we host and the culture we host. For this reason, the inclusion of national folklore elements in method books and curricula as a consistent, standardised, and meaningful whole in teaching Turkish as a foreign language is an inevitable necessity in terms of both the learner's discursive competence in being a language user and a social actor and in terms of how cultural diplomacy activity is seen.

Language can be defined as a way of interpreting, naming, and conveying the world. For this reason, if the content used in teaching Turkish as a foreign language is limited to the system and structure of the language, it will be challenging for the student to form a discourse as a language user. For this reason, we need to have a unique approach that we will say and define in the place that the West calls social actor, interculturality, cultural competencies, and Russian linguistics circle emphasises as country linguistics. Therefore, it is thought that an approach that we can describe as containing action-oriented national folklore elements can reveal a perspective that covers all the linguistic and cultural characteristics of Turkey and the Turkish world. This approach does not see culture as an encyclopaedic knowledge that should be introduced to students in the foreign language teaching process or that students should memorise. Instead, culture is a guide that shows how the student will speak, write, and understand, and it is a knowledge that sheds light on the learner's path in achieving discursive competence. Therefore, what is expected from the student, who is defined as a language user and social actor, can be defined as acting according to the language level, based on the cultural content they have acquired, and for bringing the acquired culture to the word. In order for language to function as a communication tool, it can be said that it must first be accepted as a tool that conveys common cultural values.

The most important principles on which the action-oriented approach of national folklore elements is based onthe awareness of two different cultural components called the encyclopaedic

knowledge of Turkish culture and knowledge of Turkish society in teaching Turkish as a foreign language. In order to summarise the perspective of the approach, the main principles include the inclusion of the content of Turkish culture, which is recommended to cover all Turkish states when teaching Turkish as a foreign language, and that the national folklore elements include not only the historical dimension but also current information about the present time. In order for the elements of Turkish national folklore not to be considered as cultural knowledge to be learned or memorised in the process of teaching Turkish as a foreign language, care should also be taken not to include the elements of national folklore in the form of touristic brochures, advertisements, promotional texts in the books used in the process of teaching Turkish as a foreign language. For this reason, sharing Turkish national folklore elements through original texts used in materials aimed at improving reading comprehension, writing, listening comprehension, and speaking skills in teaching Turkish as a foreign language and not being evaluated as a fifth skill apart from the four language skills can be counted among the significant factors. In this context, the most important principles of the action-oriented national folklore elements approach are to carefully prepare all the activities in the method books by taking into account the cultural components to pay attention to the equal presence of an encyclopaedic knowledge of Turkish culture and Turkish social knowledge and to take care that the sociolinguistic content is compatible with the shared Turkish social knowledge. It is also recommended to carefully select national folklore elements from folklore sources within the framework of cultural diplomacy elements and measure and evaluate the student's mastery of national folklore elements within the scope of language levels.

"Every society has words that have become a tradition to be said in certain situations and events, and stereotyped words that reveal emotions" (Temur & Arslan, 2018). Based on this definition, the action-oriented approach of national folklore elements gives a special meaning to vocabulary teaching. However, it is also important to create country-linguistic dictionaries, also called untranslatable words, which are loaded with particular meanings that do not have any equivalent in every culture, and to reconsider vocabulary teaching in the field of teaching Turkish as a foreign language based on these dictionaries. *"The works that best show the vocabulary of a language are dictionaries"* (Kartallıoğlu, 2015, 13). It is necessary to underline that the dictionaries used in the teaching of Turkish as a foreign language should be considered in the context of language worldview and the frequency of use in society.

Each language opens up for its speakers' areas of thought that are unparalleled in other languages because every language is already the product of these thinking areas and the cultural past that includes thought (Cassin, 2016/2018). For this reason, teaching Turkish as a foreign language should be approachedin light of contemporary international methods. However, a Turkish-specific approach and the realisation of this process through teachers who know and can evaluate the elements

of national folklore will reduce the difficulties experienced in teaching Turkish as a foreign language and make significant progress in foundational cultural diplomacy.

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