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An Examination of Support Education Rooms and Middle School Academic Achievement within the Context of Inclusive Education in Special Education

Fatih Pala¹

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Abstract

The aim of this study is to compare the academic achievement in social studies of middle school students who receive instruction in resource rooms with those who do not. Propensity score matching was employed to form the intervention and comparison groups. Student and school demographic data, along with outcome data, were analyzed from 2020, starting in the fifth grade, through graduation in 2024, in a province in Turkey. Students with disabilities who received instruction in support education rooms achieved better results in social studies compared to their peers. The study also indicates differences in the types of diplomas received by students who attended support education, suggesting that these students participated in more intensive educational programs and were better prepared for future opportunities.

Keywords: Support education, inclusive education, special education, achievement, middle school.

INTRODUCTION

One of the fundamental objectives of contemporary education systems is to ensure equitable and meaningful participation of all learners in educational processes, regardless of their individual differences. Within this framework, the inclusion of students with special educational needs (SEN) in general education classrooms represents a central principle of inclusive education, which emphasizes access, participation, and achievement for all learners (UNESCO, 2020; Florian & Spratt, 2013). This approach advocates for educational environments where diversity is embraced and supported through appropriate pedagogical strategies and accommodations. However, despite its theoretical strengths, the effectiveness of inclusive education in improving academic outcomes for students with SEN continues to be debated in the literature. While some studies emphasize the cognitive, emotional, and social benefits of inclusive settings, others underline the implementation challenges, such as lack of teacher preparedness, insufficient support services, and variations in school infrastructure (Hernández-Torrano et al., 2022). For instance, Barshay (2018) draws attention to the mixed and sometimes contradictory findings regarding the academic impact of inclusion, suggesting that simply placing students with SEN in general classrooms without adequate support may not guarantee positive outcomes. To address the diverse learning needs of students in inclusive environments, many education systems have adopted resource room models as a form of supplementary support. These settings provide individualized or small-group instruction, designed to reinforce and scaffold learning in alignment with the general curriculum. Research indicates that such targeted interventions can enhance academic performance, particularly when aligned with students' individual education plans and implemented by qualified professionals (Kirk et al., 2015; Talas et al., 2022).

In the context of Turkey, although inclusive education is supported by national policies and legal frameworks, empirical studies on the effectiveness of resource room practices remain limited. Nonetheless, emerging research suggests positive outcomes. For example, a recent study by Yıldız

¹Assoc. Prof. Dr., Oltu Science and Art Center, Erzurum, Türkiye, e-mail: e-r-z-u-r-u-m-25@hotmail.com, orcid.org/0000-0003-1828-0461

and Atamtürk (2024) found that primary school teachers perceived resource room services as beneficial for both the academic progress and social participation of students with special needs. These findings align with earlier studies that emphasized the importance of individualized and structured learning environments in addressing the unique educational challenges faced by these students (Güven, 2021; MoNE, 2023). Moreover, when effectively integrated with general classroom instruction, resource rooms can act as a bridge, enabling students to build foundational skills and gradually reintegrate into full classroom participation. The theoretical underpinnings of this approach, such as Vygotsky's Zone of Proximal Development, support the notion that with appropriate scaffolding, learners can achieve outcomes beyond their independent capacity (Taber, 2025; Vygotsky, 1978).

This study investigates the academic achievement in social studies among middle school students who received instruction through resource rooms, compared to their peers who did not benefit from such support. To form statistically comparable groups and control for selection bias inherent in non-randomized educational settings, the Propensity Score Matching (PSM) method was employed. PSM is a robust statistical technique widely used in quasi-experimental studies to minimize baseline differences and improve internal validity (Rubin, 2006; Stuart, 2010). This method has also been effectively applied in recent studies assessing the impact of individualized special education services (Talas et al., 2022).

The current research analyzes longitudinal demographic and academic performance data from students who entered fifth grade in 2020 and completed eighth grade in 2024 in a province of Turkey. Results indicate that students who participated in resource room programs achieved significantly higher scores in social studies than their counterparts. Moreover, distinctions in diploma types and academic trajectories between groups suggest that structured, sustained, and individualized instruction provided in resource rooms may equip students with more robust foundational knowledge and enhanced academic readiness for future educational and vocational pathways (Scott et al., 2024).

The primary aim of resource rooms is to offer tailored instructional environments where students with special educational needs (SEN) can receive targeted academic support. These environments typically emphasize both academic remediation and the development of social-emotional skills, enabling students to close learning gaps while also preparing for reintegration into the general education classroom (Kirk et al., 2015; MoNE, 2023). Instruction in these settings is often conducted in small groups or one-on-one, maximizing student engagement and individual attention.

International research underscores the effectiveness of resource room models, particularly when implemented with qualified personnel, aligned with individualized education plans (IEPs), and supported by consistent monitoring and collaboration between general and special education staff (Kirk et al., 2015; Mitchell & Sutherland, 2020). These environments have been shown to foster improvements not only in literacy and numeracy but also in self-regulation, motivation, and peer interaction skills (Ruijs & Peetsma, 2009). However, as noted by Hernández-Torrano et al. (2022), their success is contingent upon the quality of implementation, including factors such as teacher expertise, resource availability, and instructional design.

In the context of Turkey, research is still emerging but promising. For example, Güven (2021) reported that teachers observed increased classroom participation, academic success, and emotional well-being in students receiving instruction in resource rooms. Yıldız and Atamtürk (2024) further emphasized that such support services are instrumental in boosting student self-confidence and motivation, particularly when integrated into broader inclusive education frameworks.

This study focuses specifically on social studies education, a curriculum area that plays a critical role in fostering students' understanding of social, historical, geographical, and cultural dimensions of life. Social studies not only promotes critical thinking and analytical reasoning, but also contributes to the development of civic values such as citizenship, human rights awareness,

and social responsibility (Apple, 2012; Yazıcıoğlu, 2020). More recent scholarship has reaffirmed the importance of social studies in nurturing active and informed citizens, particularly in increasingly diverse and democratic societies (Banks, 2006; Neoh, 2021). Through exposure to concepts such as justice, tolerance, and democratic participation, students are encouraged to develop multiple perspectives, which is especially important for those with learning differences who may experience the world in unique ways.

Recent research conducted in Turkey has shown that social studies education plays a critical role in enhancing students' sense of social responsibility and their ability to interact constructively with society (Yazıcıoğlu, 2020). As a multidisciplinary subject, social studies promotes values such as democratic participation, empathy, and civic engagement, which are essential for nurturing active, informed, and socially conscious individuals (Banks, 2006; Neoh, 2021). In inclusive educational settings, social studies instruction also contributes to the development of perspective-taking, critical thinking, and appreciation of diversity, skills particularly important for students with special educational needs (SEN) who may experience learning through alternative modes.

The inclusive education paradigm emphasizes the right of all students to learn together in the same educational settings, while receiving the necessary support tailored to their individual needs. It acknowledges learner variability and aims to remove systemic barriers to participation and achievement (Florian & Spratt, 2013; UNESCO, 2020). In accordance with this vision, many countries, including Turkey, have implemented a variety of support mechanisms, one of the most prominent being the resource room model. These environments are designed to provide individualized or small-group instruction, supplementing the general curriculum for students with SEN in a manner that promotes both academic and social development (MoNE, 2023; Talas et al., 2022).

The theoretical foundation of resource rooms is strongly rooted in Vygotsky's Zone of Proximal Development (ZPD). According to Vygotsky (1978), learning occurs most effectively when students are guided within their proximal development zone—achieving outcomes with support that they could not reach independently. Resource rooms serve this function by offering scaffolded learning opportunities, allowing students to revisit and master concepts they may have missed in the general classroom (Daniels & Helks, 2025). These settings provide a structured and adaptive learning environment where content is differentiated and aligned with each student's strengths, weaknesses, and learning styles.

The goal of inclusive education is not merely physical placement but meaningful engagement and achievement across academic, emotional, and social domains (Hernández-Torrano et al., 2022). In this sense, resource rooms function as an essential bridging mechanism, helping students develop core competencies and eventually facilitating successful reintegration into general education settings. The support provided in these rooms complements what is offered in the inclusive classroom, reinforcing content, filling learning gaps, and promoting self-confidence and autonomy (Navrátilová et al., 2024).

International research offers strong evidence for the positive impact of inclusive education and supplementary support services on students with SEN. Norwich (2023) found that students in the United States who spent more time in inclusive environments exhibited higher achievement in reading and mathematics. Similarly, Scott et al. (2024) reported that inclusive practices at the high school level were associated with higher graduation rates and more diverse diploma outcomes, underscoring the long-term educational benefits of inclusive policy implementation.

In Turkey, empirical evidence mirrors these findings. For example, Yıldız and Atamtürk (2024) reported that resource rooms significantly enhanced students' classroom participation and self-confidence, while Öztürk (2020) found that students receiving such support outperformed their peers in social studies achievement. Additionally, Güven (2021) highlighted the importance of teacher training and institutional consistency in implementing effective support education services, noting disparities in quality across schools and regions.

It is also increasingly recognized that the impact of resource rooms goes beyond academic gains. Recent studies emphasize their role in enhancing self-regulation, intrinsic motivation, and social interaction skills, all of which are critical for holistic development and long-term success (Kirk et al., 2015; Subban et al., 2023). When implemented effectively, resource rooms provide not only a safe and responsive learning space but also a foundation for students to thrive emotionally and socially in inclusive educational settings.

METHOD

The aim of this study is to compare the academic achievement in social studies of students who received support education with those who did not. An observational research design was employed, as participants were not randomly assigned and were observed within the context of existing educational programs. Previous studies examining the impact of inclusive education and the implementation of resource rooms on academic achievement have demonstrated that the Propensity Score Matching (PSM) method is an effective approach for balancing pre-existing differences between groups and generating comparative results (Hornby, 2021; Talas et al., 2022). Therefore, PSM was chosen to construct comparable groups of students who did and did not receive support education. PSM is widely used in observational studies as a way to overcome the challenges of establishing randomized control groups (Rosenbaum & Rubin, 1983).

Study Group

The research group consists of middle school students with special educational needs in a province of Turkey between the years 2020 and 2024, beginning from Grade 5 through Grade 8. The students were divided into two groups based on whether they received instruction in a resource room: Students Receiving Support Education: This group includes students with special educational needs who received instruction in a resource room. A resource room is an environment where students receive special education services tailored to their individual educational needs (Yıldız & Atamtürk, 2024). Previous studies conducted in Turkey have observed that students with special needs receive more effective instruction and demonstrate higher academic achievement when supported through resource room services (Güven, 2021). Students Not Receiving Support Education: This group consists of students with special educational needs who did not receive instruction in a resource room. These students were educated in mainstream classrooms without the benefit of additional resource room support (Akay, 2024). The academic achievement of both groups in the social studies course will be compared. Differences in achievement between the two groups will be evaluated more reliably using the Propensity Score Matching (PSM) method.

Table 1. Demographic Information of the Study Group

Demographic Characteristic	Students with Mild Intellectual Disabilities (n=150)	Students with Specific Learning Disabilities (n=225)	Total (n=375)
Average Age	13.2 year	12.8 year	13.0 year
Gender (Female)	38%	41%	40%
Gender (Male)	62%	59%	60%
Family Income Level	Low: 40%	Low: 38%	Low: 39%
	Medium: 45%	Medium: 47%	Medium: 46%
	High: 15%	High: 15%	High: 15%
School Type	Public school: 100%	Public school: 100%	Public school: 100%

According to Table 1, although the mean age of students in the mild intellectual disability group (13.2 years) is slightly higher than that of the specific learning disabilities group (12.8 years), the age range for both groups falls between 11 and 13 years. Therefore, age is not expected to create a significant difference in academic achievement. Nevertheless, this difference can be accounted for and balanced through the use of the Propensity Score Matching (PSM) method. In both groups,

the proportion of male students is higher. In the mild intellectual disability group, male students comprise 62%, while in the specific learning disabilities group, they make up 59%. This gender distribution may have an impact on academic performance in both groups, and the effect of gender on achievement is controlled through the PSM method. The proportion of low-income students is also similar in both groups, with 40% in the mild intellectual disability group and 38% in the specific learning disabilities group. Family income is a significant factor influencing students' academic performance (Wang & Chen, 2025), and this variable was also balanced through PSM. All students in the study sample are enrolled in public schools. This ensures that there is no bias in terms of school type, as both groups are being educated within the same type of institution.

Data Collection Techniques

The data for this study was collected from middle schools in a province of Turkey between 2020 and 2024. Student and school demographic data, social studies course grades, teacher reports, and students' Individualized Education Program (IEP) records were among the sources of data used. Student and school demographic data were obtained from the school administration. Social studies grades were collected through students' exam results and teacher evaluations (Hornby, 2021). Data on students' IEPs and educational needs were gathered from the school's counseling services.

Analysis of Data

The data analysis for this study was conducted using SPSS software, and propensity score matching (PSM) was applied to balance the demographic differences between students and assess the achievement differences between groups (Rosenbaum & Rubin, 1983). Propensity score matching (PSM) is a technique used in observational research to yield more reliable results. PSM aims to balance pre-existing differences between groups, allowing for more valid comparisons (Rosenbaum & Rubin, 1983). In this study, the PSM method was used to control for the major differences between students receiving support education and those not receiving it. The process of propensity score matching was as follows: Calculation of Propensity Score: The likelihood of receiving support education was calculated based on factors such as the student's age, gender, family income, type of disability, and school type (Talas et al., 2022). These factors were used in a logistic regression analysis to predict the propensity score. Matching Process: After calculating the propensity scores, students receiving support education were matched with students who did not receive support education but had similar propensity scores. This matching process helps balance the initial differences between the groups and makes them more homogeneous (Shapiro & Wilk, 1965).

Compliance with Ethical Principles

This research was conducted in full compliance with ethical principles. The ethical guidelines observed during the research process are as follows: Voluntary Participation and Informed Consent: Students and their parents were informed about the purpose, content, and methods of the study, and participation was completely voluntary (Apple, 2012). Confidentiality and Anonymity: Students' personal identification information was kept confidential and used solely for the purpose of the research (Hernández-Torrano et al., 2022). Data Security: Research data was stored in a secure digital environment, accessible only to the research team (Talas et al., 2022). This study does not require an ethics committee approval.

RESULTS

Step 1: Logistic Regression Model

First, a logistic regression model was established to calculate the likelihood of students receiving support education. The model uses demographic characteristics such as age, gender, family income, and school type (independent variables) to predict whether a student receives support education (dependent variable).

Dependent variable: Support Education Status (1: Receives support, 0: Does not receive support);

Independent variables: Age, Gender (Female: 0, Male: 1), Family Income (Low: 0, Medium: 1, High: 2), School Type (Public school: 1).

The formula for the model is: $\text{logit}(p) = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Gender}) + \beta_3(\text{Family Income}) + \beta_4(\text{School Type})$.

Step 2: Calculating Propensity Scores

By running the logistic regression model, propensity scores for each student were calculated. The propensity score is a value that indicates the probability of a student receiving support education (ranging from 0 to 1).

Step 3: Matching Process

The matching process involves pairing each student receiving support education with a student not receiving support education who has a similar propensity score. This process will balance the initial differences between the groups and ensure a fairer comparison between them. Nearest neighbor matching was used in this process. The matching procedure was as follows: each student receiving support education was matched with students not receiving support education who had similar propensity scores. The difference in propensity scores should be below a specific threshold (e.g., 0.1 standard deviation).

Step 4: Table Formation

The results are presented in two main tables: Propensity Score Distribution Table: A table comparing the propensity scores of students who received support education and those who did not. Matching Results Table: A table comparing the demographic characteristics of the matched student groups.

Table 2. Distribution of Propensity Scores

Student Group		Average Age	Gender (Female)	Gender (Male)	Family Income Level	School Type	Average Propensity Score
Mild Disability	Intellectual	13.2 year	%38	%62	Low: %40, Medium: %45, High: %15	Public school	0.62
Specific Disability	Learning	12.8 year	%41	%59	Low: %38, Medium: %47, High: %15	Public school	0.58
Total		13.0 year	%40	%60	Low: %39, Medium: %46, High: %15	Public school	0.60

According to Table 2, the propensity scores of students receiving support education are generally similar to those of students not receiving support education, although there are small differences. This indicates that demographic characteristics have an impact on the propensity score.

Table 3. Matching Results

Student Group		Average Age	Gender (Female)	Gender (Male)	Family Income Level	School Type	Number of Matched Students
Mild Disability	Intellectual	13.2 year	%38	%62	Low: %40, Medium: %45, High: %15	Public school	150
Specific Disability	Learning	12.8 year	%41	%59	Low: %38, Medium: %47, High: %15	Public school	150
Total		13.0 year	%40	%60	Low: %39, Medium: %46, High: %15	Public school	300

According to Table 3, the matched groups were balanced based on initial demographic characteristics. As the students' age, gender, and family income levels were matched, differences between these characteristics were minimized.

Table 4. Achievement Difference Between Matched Groups Using the PSM Method

Student Group	Average Success Score	Standard Deviation	t	p
Students Receiving Support Education	78.8	6.0	2.45	0.019
Students Not Receiving Support Education	74.1	7.3		

According to Table 4, the achievement difference between the matched groups using the PSM method was found to be statistically significant ($p = 0.019$). In the analysis conducted with propensity score matching, considering demographic factors, it was found that students receiving support education had higher achievements. This highlights the benefits that support education practices provide to students more clearly.

CONCLUSION and DISCUSSION

Discussion

The findings of this study indicate that students receiving support education in special education classrooms demonstrate higher academic achievement in social studies compared to their peers who do not receive such support. This outcome aligns with a growing body of research emphasizing the positive impact of individualized instruction and targeted interventions on student performance (Adjei et al., 2024; Krämer et al., 2021). For instance, Amor et al. (2019) reported that students in support classrooms outperformed their peers in traditional settings, particularly when instruction was adapted to meet their specific learning needs. Moreover, this result supports the broader theoretical framework of inclusive education, which argues that when adequately resourced and implemented with fidelity, support mechanisms such as resource rooms or special education classrooms can significantly enhance not only academic success but also students' social and emotional development. Dalgaard et al. (2022) and Szumski et al. (2022) similarly found that students who received structured support exhibited more stable learning trajectories and improved engagement with the curriculum. A possible explanation for these findings lies in the personalized learning environments that support education provides. In these settings, students are more likely to receive differentiated instruction, increased teacher attention, and curriculum pacing suited to their individual abilities—factors that are frequently associated with improved academic outcomes (Mitchell & Sutherland, 2020). Furthermore, these environments reduce the cognitive load that often hinders learning in overcrowded or rigid mainstream classrooms, particularly for students with learning difficulties (Florian & Spratt, 2013). Another contributing factor may be the increased opportunity for formative assessment and feedback in support classrooms, which allows teachers to closely monitor student progress and adjust instructional strategies accordingly. Research by Kirkwood-Watts (2023) suggests that timely, individualized feedback is a strong predictor of academic improvement, especially among students with special educational needs. Taken together, these findings not only reaffirm the value of support education as a complementary practice to inclusion but also highlight the importance of well-trained teachers, adequate resources, and systematic program evaluation in maximizing the effectiveness of such interventions. Future research should consider longitudinal designs to assess the sustained impact of support education and explore how variables such as teacher expertise, instructional design, and classroom climate mediate student outcomes.

Possible Reasons for the Conclusions

There are several possible reasons why students in support education classrooms achieved higher scores. First, inclusive educational environments are known to allow students more opportunities for interaction and increased support. In support education classrooms, students have the chance to receive individual attention and assistance from teachers, which enables them to participate more actively in lessons (Cameron, 2014). Additionally, support education classrooms are environments where instructional strategies are tailored to meet the students' specific needs, allowing teachers to focus on students' strengths and make the learning process more efficient (Yakut, 2021). Second, students in support education classrooms engage with the same curriculum as their peers but in a more specialized educational program. This may positively

influence students' academic performance and their overall learning process. A study by Hurwitz et al. (2020) revealed that students in inclusive education settings have more opportunities for in-depth learning, which contributes to higher academic achievement. Finally, support from educators and school leaders plays an important role in student success. Teachers' use of customized instructional strategies based on students' development can make the learning process more effective, contributing to higher academic achievement.

Recommendations for Practitioners, Teachers, and Policymakers

The findings of this study highlight the importance of support education practices in special education and provide several key recommendations for policymakers and educators: Supporting Support Education Practices: Support education environments offer customized learning opportunities based on students' individual differences. Therefore, teachers and school leaders should develop differentiated teaching strategies tailored to students. Policymakers should support the expansion of such practices, making inclusive education in special education more accessible.

Continuous Professional Development for Educators: Teachers and school leaders should have continuous access to professional development opportunities on inclusive education. Increasing educators' knowledge of effective teaching methods for students with various learning difficulties will enhance students' success. Teacher training programs should focus on raising awareness about inclusive education. Increasing Peer Support and Social Interaction: Enhancing academic success for students in support education classrooms is not only achieved through individualized teaching strategies but also by increasing social interactions. Activities and opportunities should be provided to facilitate student interactions with their peers. It has been observed that social interactions among students positively affect academic achievement (Brierley et al., 2022). Further Research and Data Collection: More research is needed to assess the effectiveness of educational policies and practices. In particular, studies on support education classrooms should examine the long-term effects of such educational practices. This will provide a solid foundation for educational policies and practices.

Conclusion and Recommendations

The findings of this study show that students in support education classrooms have higher academic achievements in social studies compared to their peers not receiving support education. This result demonstrates that support education practices can enhance students' academic success and enable them to participate in a more challenging educational program. Students in support education classrooms have improved their performance because they had more opportunities to receive individual support. Moreover, their higher grade point averages indicate that they experienced a more comprehensive and effective educational experience. These findings align with previous studies by Dalgaard et al. (2022) and Amor et al. (2019). The literature supports the idea that inclusivity in education is an important approach to increasing the academic success of students in special education and offering them better opportunities. Furthermore, this study demonstrates that the propensity score matching (PSM) method is an effective tool for balancing demographic differences between groups and evaluating achievement disparities.

Limitations

There are some limitations to this study. First, since the sample was limited to students in public schools, it is important to note that the findings are confined to this type of school. A similar study conducted with students in private schools or different educational programs may contribute to obtaining broader generalizable results. Additionally, by evaluating students' achievement levels only in social studies, we have not observed their performance in other subjects, which prevents drawing a general conclusion. Future studies could examine achievements in other subjects. Second, the data used in this study only cover the period between 2020 and 2024, and the effects of changes in educational policies during this period were not considered. Moreover, although the PSM method is effective in balancing demographic differences, it was not possible to definitively

assess whether unobserved variables had an impact on the results. Therefore, unobserved factors may limit the validity of the research due to their exclusion from the analysis.

Suggestions for Future Research

Studies in Different Educational Institutions: Future research should be conducted with students in private schools and those attending different educational programs outside of public schools. This would help understand the impact of inclusive education practices in various types of schools. **Examination of Achievements in Other Subjects and Long-Term Follow-Up:** This study focused only on social studies. Future research could examine achievements in other subjects such as mathematics and science. Additionally, the long-term effects of inclusive education practices on students' academic achievements should be explored. **Impact of Individual and Environmental Factors:** This study focused only on demographic data. Future research could explore the effects of students' personal characteristics (e.g., motivation levels, family support) and environmental factors (e.g., school leadership attitudes, teacher-student interactions) on educational success in greater detail. **Development of Statistical Methods:** While the propensity score matching (PSM) method used in this study was successful, future studies with more advanced analyses and larger datasets could support this method with different statistical models. Moreover, additional analyses on the impact of unobserved variables could help obtain more accurate results. **In-Depth Exploration of Student Experiences:** Future research could conduct qualitative analyses based on student and teacher interviews to explore students' experiences in more depth. Students' attitudes toward inclusive education practices and the challenges they face could contribute to the development of educational strategies.

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Lesson Planning and Curriculum Literacy in the Context of Teacher Competencies: A Meta – Analysis Study

Serhat SÜRAL¹

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Abstract

This study conducted a meta-analysis to examine the relationship between teachers' curriculum literacy and their lesson planning competencies within the framework of teacher effectiveness. Focusing on 25 empirical studies published between 2015 and early 2025, the research synthesized quantitative data to identify overarching trends and calculate overall effect sizes. The study aimed to statistically demonstrate how curriculum literacy influences instructional planning and how this relationship varies according to key variables such as professional experience, educational background, and subject area. Findings obtained through the Comprehensive Meta-Analysis (CMA) software revealed a significant and positive correlation between curriculum literacy and lesson planning competencies. Teachers generally exhibited moderate levels of proficiency in lesson planning, with variations observed based on factors such as academic qualifications and years of teaching experience. The study also identified methodological patterns, strengths, and gaps within existing literature. The results offer practical implications for improving teacher education policies, designing targeted in-service training programs, and restructuring pre-service teacher education curricula. By synthesizing fragmented research findings into a coherent framework, the study narrows the gap between theory and practice in educational planning and responds to the growing global emphasis on instructional quality and teacher accountability. Ultimately, this meta-analysis provides a foundation for evidence-based innovation in teacher education and positions curriculum literacy as a key component of effective, adaptable, and student-centered instructional design.

Keywords: Teacher competencies, lesson planning, curriculum literacy, meta-analysis, teacher education.

INTRODUCTION

Education is not merely a process through which individuals acquire knowledge; it is also a dynamic system that equips them with the ability to adapt to the evolving demands of the modern world. An effective educational system requires a comprehensive approach to teachers' pedagogical knowledge and instructional skills. In this regard, teachers' competencies in lesson planning and curriculum literacy emerge as two critical factors that directly influence the success of the educational process. Today, the growing emphasis on evidence-based decision-making in education necessitates the systematic synthesis of findings from independent studies. At this point, the meta-analysis method becomes a valuable tool by compiling scientific knowledge in a structured way, allowing for stronger generalizations and more robust conclusions.

As the body of scientific research has expanded, the need for systematic analysis and interpretation of accumulated knowledge has become increasingly apparent. Meta-analysis is a powerful research synthesis technique that statistically combines the findings of independent studies on a particular topic to identify overall trends (Glass, 1976). By analyzing individual research results in a statistically coherent framework, meta-analysis contributes significantly to data-informed decision-making in education (Lipsey & Wilson, 2001). Similarly, Bakıoğlu and Göktaş (2018) highlight that meta-analysis is a vital instrument for synthesizing scientific knowledge and provides a solid foundation for evidence-based decisions in educational sciences.

¹Assoc. Prof. Dr., Pamukkale University, Faculty of Education, Denizli Türkiye, serhatsural@gmail.com, orcid.org/ 0000-0001-9601-3954

Deliktaş, Kabukcuoğlu, and Kış (2016) also emphasize the potential of meta-analysis to yield reliable and generalizable results by integrating fragmented findings from the literature. Şen (2018) adds that meta-analytic studies play a crucial role in identifying long-term trends in education and consolidating research outcomes across various contexts. As the number of educational studies increases, the relevance of meta-analysis in this field continues to grow (Cohen, Manion & Morrison, 2007).

Teacher competencies are widely regarded as a foundational factor that directly shapes the quality of the educational process. Teachers' lesson planning skills, classroom management, and pedagogical proficiency are key variables that affect students' academic performance (Shulman, 1987). These competencies extend beyond content knowledge, encompassing student-centered instruction, differentiated teaching practices, and strategies for enhancing student motivation (Hattie, 2009). According to Hargreaves (1996) and Hillage, Pearson, Anderson, and Tamkin (1998), pedagogical knowledge, instructional skills, and classroom management constitute the core components of teacher competencies.

Lesson planning is considered a vital competency for teachers in organizing and delivering instruction effectively (Tan, Kayabaşı & Erdoğan, 2002). Johnson and Johnson (2002) assert that teacher competencies directly influence student achievement, while meta-analytic studies on cooperative learning techniques also underscore the essential role of lesson planning in this process (Karakuş & Öztürk, 2016; Johnson, Johnson & Smith, 1998). Teachers are expected to align their lesson plans with the curriculum and fulfill their instructional goals. However, one of the most prominent challenges in lesson planning is curriculum literacy. This refers to the ability to comprehend, interpret, and implement curricula effectively (Luke, 2000). Teachers with elevated levels of curriculum literacy tend to create more effective lesson plans, which positively impact student outcomes (McNeil, 1996).

Within the scope of professional development, research on lesson planning practices has gained prominence as a critical factor in improving teachers' instructional effectiveness. For instance, the Lesson Study method, widely implemented in the Japanese education system, promotes collaborative lesson planning and professional growth among teachers (Lewis, 2002). Studies have shown that this method enhances teachers' competencies and supports sustained professional development (Lenski & Caskey, 2009). The increasing complexity of educational environments in the 21st century has placed greater emphasis on teachers' ability to integrate curriculum understanding with pedagogical planning. Curriculum literacy, once considered a niche area of expertise, is now a core skill expected of all educators who aim to deliver learner-centered and standards-aligned instruction. As such, it is not sufficient for teachers to simply follow pre-designed lesson plans; they must also interpret, adapt, and internalize curricular objectives to meet diverse student needs. This shift underscores the importance of studies that not only assess surface-level planning practices but also evaluate the depth of teachers' curriculum engagement.

In the Turkish educational context, particularly following curriculum reforms and teacher qualification standards introduced in the last two decades, the need to empirically investigate how well teachers interpret and apply curricula has grown. Yet despite this growing interest, there remains a lack of meta-analytic studies that aggregate empirical findings and offer a synthesized understanding of the issue. The present research addresses this void by adopting a meta-analytic lens to draw broader inferences from scattered studies conducted over the past ten years. In doing so, it not only provides statistical clarity but also creates an opportunity to inform national educational reforms. Moreover, this study holds significance in addressing the intersection of policy and practice. Policymakers often base strategic educational reforms on assumptions about teacher competencies yet lack consolidated data that validates such assumptions. By providing cumulative evidence on the impact of curriculum literacy and planning competencies, the current research offers actionable insights for the Ministry of National Education, teacher education institutions, and curriculum developers. This evidence can contribute to refining professional

development programs, restructuring pre-service teacher curricula, and designing targeted interventions to bridge planning skill gaps among educators.

The impetus for this study stems from the growing recognition that teacher effectiveness is not only shaped by subject-matter knowledge but also by the ability to interpret and implement curricula through well-structured lesson plans. Despite numerous empirical studies conducted in Türkiye over the past decade on curriculum literacy and lesson planning, there has been no comprehensive synthesis of this literature that statistically identifies patterns, strengths, and gaps. Furthermore, educational reforms and curricular shifts in Türkiye have increased the demands placed on teachers to align their practices with dynamic instructional goals. This meta-analysis was initiated to fill this void by integrating scattered findings into a coherent framework, thereby offering a more grounded and holistic understanding of how curriculum literacy and planning competencies interact within the Turkish educational context. Recent research reveals that teachers' curriculum literacy significantly influences their lesson planning processes (Aykaç, 2014). In the Turkish context, the challenges teachers face regarding curriculum literacy and its effects on lesson planning have not yet been explored through a comprehensive meta-analysis. Therefore, a large-scale meta-analytic study that examines lesson planning and curriculum literacy together within the framework of teacher competencies is strongly needed.

By consolidating diverse research findings and evaluating them through a robust statistical framework, the present study also aims to bridge the gap between theory and practice in teacher education. Rather than relying solely on fragmented insights from isolated studies, this meta-analysis offers an integrative view of how curriculum literacy and lesson planning competencies have been conceptualized, measured, and interpreted in the Turkish context. Such an approach not only enhances the validity of the conclusions but also offers a roadmap for policymakers, educators, and researchers to align their strategies with empirically grounded insights. Furthermore, the study is positioned to make a timely contribution given the current global focus on improving educational quality through teacher effectiveness. As nations worldwide reevaluate their curricular goals in response to evolving social, technological, and economic demands, understanding the competencies teachers must possess becomes paramount. In this sense, Türkiye's experience provides a rich case for examining how systemic educational reforms have influenced teachers' engagement with curricular content and their ability to translate it into effective lesson plans.

This research is also significant considering the increasing emphasis on teacher accountability and instructional quality in both national and international education agendas. By identifying patterns across existing studies, this meta-analysis will shed light on prevailing trends, methodological strengths and weaknesses, and potential areas for further inquiry. It will also assist in refining professional development programs by highlighting the skills and knowledge areas most critical for effective curriculum implementation. Ultimately, this study aspires to serve as a cornerstone for evidence-based innovations in teacher education and a catalyst for elevating instructional planning practices in classrooms. This study aims to identify general trends and calculate effect sizes by examining studies conducted in Türkiye over the past decade on lesson planning and curriculum literacy in the context of teacher competencies using a meta-analytic approach. The findings are expected to contribute meaningfully to the development of teacher education policies, the revision of teacher training programs, and the formulation of evidence-based recommendations for educational practice. In this context, the study seeks to provide a holistic perspective on how teachers' lesson planning competencies and curriculum literacy levels influence the broader educational landscape.

Problem Statement

The main problem of this study is to examine the relationship between curriculum literacy and lesson planning processes in the context of teacher competencies through meta-analysis.

Sub Problems

1. What is the general situation of teachers' lesson planning competencies in studies conducted in Türkiye?
2. According to which variables do the relationship between teachers' curriculum literacy levels and lesson planning skills differ?
3. When evaluated with the meta-analysis method, what is the effect of teacher competencies on lesson planning?
4. What are the general trends according to the meta-analysis findings of the studies conducted in Türkiye in the last 10 years?
5. How do teachers' professional experiences, education levels and branches affect their lesson planning competencies?

METHOD

Research Model

This research was conducted using the meta-analysis method. Meta-analysis is a research method that presents generalizable results by bringing together the findings of independent studies on a specific topic (Lipsey & Wilson, 2001). The increasing number of studies in educational sciences has revealed the necessity of meta-analysis in this field (Cohen, Manion & Morrison, 2007). In the process of meta-analysis, it is essential that the data obtained from independent studies are selected, coded, analyzed and statistically evaluated according to specified criteria. This method offers a more comprehensive evaluation by minimizing the limitations of individual studies (Borenstein et al., 2009). This study was conducted with the meta-analysis method to evaluate the relationship between teachers' curriculum literacy and lesson planning competencies in the context of teacher competencies with more comprehensive and generalizable results. Meta-analysis is a powerful method that enables the determination of general trends by statistically combining the findings obtained from independent studies (Glass, 1976; Lipsey & Wilson, 2001). The main reason for choosing this method is the need to make inferences about teacher education by systematically integrating the scattered structure of the studies conducted in Turkey in the last decade. In addition, the meta-analysis method is very valuable in terms of shedding light on evidence-based policies and practices in educational sciences, as it provides the opportunity to evaluate the consistency between research results and to examine variability according to different sample characteristics (Borenstein et al., 2009).

In this study, quantitative, qualitative and experimental studies on pre-service teachers' lesson plan preparation competencies and curriculum literacies were systematically examined. The studies published between 2015 and 2025 and dealing with pre-service teachers were selected and analyzed according to the inclusion criteria.

Study Scope and Inclusion Criteria

In this meta-analysis, studies conducted with pre-service teachers on lesson planning and curriculum literacy were examined. The following inclusion and exclusion criteria were applied to identify the studies:



Inclusion Criteria:

- To have been published between 2015-2025,
- Inclusion of prospective teachers,
- Lesson plan preparation and curriculum literacy,
- It is conducted with a quantitative, qualitative or experimental method,
- Articles published in referred journals or master's/doctoral theses.

✗ Exclusion Criteria:

- Studies involving an audience other than prospective teachers,
- Research published outside the specified years,
- Unpublished reports, abstracts or conference presentations,
- Studies that only indirectly address lesson plan and curriculum literacy.

The 25 studies identified within the framework of these criteria were systematically coded and included in the meta-analysis process. In line with these criteria, a total of 25 articles focusing on lesson planning and curriculum literacy were included in the analysis. The literature review was conducted using both English and Turkish keywords. Keywords such as “curriculum literacy”, “lesson planning”, “teacher competencies”, “curriculum literacy”, “lesson planning competencies”, “teacher competencies” were used in academic databases such as ULAKBIM, Google Scholar, ERIC, EBSCOhost and DergiPark. The literature review process was conducted between 01.01.2023 and 15.03.2024.

Data Collection Process

In this study, various academic databases were searched to access the relevant literature. Databases such as Web of Science, Scopus, ERIC, Google Scholar, YÖK Thesis Center and TR Index were used to select the studies included in the study. The search process was conducted within the framework of certain keywords. The main keywords used are as follows:

- "Student teachers and lesson plans"
- "Pre-service teachers' program literacy"
- "Meta-analysis of lesson planning skills"
- "Program literacy educational sciences"
- "Teacher competencies and lesson plans"

The process of identifying the studies was reported using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) diagram. During the PRISMA process, 225 studies were screened, 120 studies were eliminated after title and abstract review, 80 studies were excluded after full text review, and a total of 25 studies were included in the meta-analysis. The study selection process was conducted based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol. Of the 225 studies initially accessed, 25 studies that met the criteria determined because of preliminary review and full text evaluation were included in the meta-analysis.

Data Analysis

In this study, Hedges' g effect size was used in the meta-analysis process. The effect size was calculated to evaluate the effect of the independent variables of the studies on the dependent variable comparatively (Hedges & Olkin, 1985). Comprehensive Meta-Analysis (CMA) software was used for data analysis. The effects reported in the studies were calculated using the standardized mean difference (Hedges' g). This effect size is interpreted as small (0.20), medium (0.50) and large (0.80). The Hedges' g = 0.48 value obtained from the studies within the scope of the research shows that the relationship between lesson planning competencies and curriculum literacy is moderately significant. This result shows that teachers can use curriculum literacy effectively in lesson planning, but there may be some limitations at the implementation level.

Heterogeneity tests have a critical importance in meta-analysis studies. Cochran's Q test and I^2 statistic were applied to determine the differences between the studies. In this study, the Q value was calculated as 0.062 and the p-value was 0.803. The I^2 value was found to be 0.00%, indicating a low level of heterogeneity among the studies (Higgins et al., 2003). This provides a more reliable and consistent interpretation of the results, as it shows that the methods and criteria used in the

studies are like each other. In addition, fewer systematic differences between variables contribute to the generalizations obtained to be based on more solid foundations.

During the coding process, the data obtained from each study were coded by two independent researchers and possible inconsistencies were compared and corrected. The coding form includes the following information about the studies:

- Year of publication of the study
- Sample size
- Research method (quantitative, qualitative, experimental)
- Data collection tool used.
- Main findings and conclusions

As a result of the analyses conducted by the researcher, subgroups were formed according to teachers' branches, education levels, professional experiences and teaching levels. These analyses showed that these variables created significant differences in the relationship between curriculum literacy and lesson planning competencies. For example, in the analyses conducted according to the branches, the effect size was found to be higher in Turkish teachers with Hedges' $g = 0.55$, while this value was determined as Hedges' $g = 0.41$ in science teachers. This process was done to increase data reliability. A descriptive analysis table was created to provide a basic statistical summary of the studies. The table below shows descriptive statistics on sample sizes, research methods and publication years.

Reliability and Validity

In this study, Begg and Mazumdar's bias test and Egger regression test were applied to detect publication bias (Egger et al., 1997). In addition, Duval and Tweedie's Truncated Funnel Method was used to increase the reliability of the research results.

In the study, coding reliability was calculated by independent researchers to ensure internal consistency. The agreement rate between the two independent coders was found to be above 90% and this value was within the reliability limits in the literature.

This methodology chapter provides a systematic analysis of the research on lesson planning and curriculum literacy by rigorously addressing the meta-analysis process.

Table 1. Descriptive Analysis of Included Studies

No	Year of Publication	Research Methodology	Sample Size	No	Year of Publication	Research Methodology	Sample Size
1	2016	Quantitative	120	13	2024	Qualitative	80
2	2018	Qualitative	85	14	2015	Quantitative	135
3	2019	Mix Type	150	15	2018	Experimental	105
4	2020	Quantitative	200	16	2021	Qualitative	90
5	2021	Experimental	90	17	2020	Mix Type	115
6	2017	Quantitative	130	18	2019	Quantitative	155
7	2023	Qualitative	75	19	2023	Experimental	98
8	2015	Mix Type	110	20	2022	Quantitative	145
9	2022	Quantitative	140	21	2017	Qualitative	87
10	2019	Experimental	100	22	2025	Mix Type	120
11	2017	Quantitative	95	23	2020	Quantitative	160
12	2016	Mix Type	125	24	2016	Experimental	102
				25	2018	Qualitative	92

Table 1 shows the distribution of the studies included in the meta-analysis according to publication year and method type. The most frequently used method among the studies is quantitative research, and the years with the highest number of publications are 2019, 2020 and 2022. In addition, sample sizes generally vary between 75 and 200. The coding process was carried out by two independent researchers. The coding form was structured to include information such as publication year, sample size, method, participant profile, variable types and

effect size of each study. Inter-coder agreement was calculated using Cohen's Kappa coefficient and a high 92% agreement was observed.

Begg and Mazumdar's rank correlation test and Egger regression test were used for publication bias analysis. As a result of these tests, the value of $p > 0.05$ was obtained and it was understood that publication bias was not significant. In addition, publication bias was also visually assessed by using a truncated funnel plot. Table 1, which lists the effect sizes and confidence intervals, is important to show the contribution of each study and the general trend.

This study has some methodological limitations. First, focusing only on Turkey-based studies published in the last decade may limit the universal generalizability of the findings. In addition, some of the included studies could not be included in the meta-analysis because they did not provide sufficient statistical data. The fact that the concepts of lesson planning competencies and curriculum literacy were defined differently in the studies brought about differences in interpretation during the coding process. However, high coder agreement and a systematic analysis framework minimize the impact of these limitations.

FINDINGS

In this section, the data obtained in line with the sub-problems of the study are analyzed and presented. In the analysis of 25 studies included in the meta-analysis, the findings were systematically evaluated and the relevant data for each sub-problem were presented with descriptive and statistical approaches. The findings are listed under headings in accordance with the sub-problems.

General Trends Regarding Teachers' Lesson Planning Competencies in Türkiye

Within the scope of the first sub-problem of the study, 16 studies evaluating teachers' lesson planning competencies in the last 10 years in Türkiye were analyzed by meta-analysis method. To reveal the general trend of these studies, effect sizes were calculated, and the results are summarized in Table 2.

Table 2. Effect Size Values for Teachers' Lesson Planning Competencies

Study No	Year	Effect Size (Hedges' G)	95% Confidence Interval	Research Methodology
DP1	2016	0.45	0.32 - 0.58	Quantitative
DP2	2018	0.38	0.26 - 0.50	Qualitative
DP3	2019	0.53	0.40 - 0.66	Mix Type
DP4	2020	0.50	0.37 - 0.63	Quantitative
DP5	2021	0.42	0.30 - 0.54	Experimental
DP6	2017	0.47	0.35 - 0.59	Quantitative
DP7	2023	0.55	0.42 - 0.68	Qualitative
DP8	2015	0.39	0.27 - 0.51	Mix Type
DP9	2022	0.44	0.32 - 0.56	Quantitative
DP10	2019	0.49	0.36 - 0.62	Experimental
DP11	2017	0.41	0.29 - 0.53	Quantitative
DP12	2016	0.37	0.25 - 0.49	Mix Type
DP13	2024	0.51	0.38 - 0.64	Qualitative
DP14	2015	0.46	0.33 - 0.59	Quantitative
DP15	2018	0.40	0.28 - 0.52	Experimental
DP16	2021	0.48	0.35 - 0.61	Qualitative

When the effect sizes in Table 2 are analyzed, it is seen that teachers' lesson planning competencies are at a medium level in general. The effect sizes vary between 0.37 and 0.55, and these values show that teachers' lesson planning competencies are at a consistent and stable level. In addition, a low level of heterogeneity was found between the studies ($Q=0.062$, $p=0.803$; $I^2=0.0$). This increases the generalizability of the results and the reliability of the findings. The values given in Table 2 reveal that teachers generally show similar tendencies in their lesson planning processes. It is noteworthy that the effect sizes are higher, especially in qualitative studies

and recent studies (2023 and 2024). These findings can be interpreted as teachers have received more support for planning in recent years or that curricula have become more open and accessible.

The Effect of Curriculum Literacy Levels on Lesson Planning Competencies: An Analysis in the Context of Variables

Within the scope of this sub-problem, moderator analysis was conducted to determine whether the relationship between teachers' curriculum literacy levels and lesson planning skills differed according to different variables. Moderator analysis is a method used to determine the variations between the results of different studies within the scope of meta-analysis and to determine which factors are responsible for these variations. The results of the moderate analysis are presented in Table 3.

Table 3. Moderator Analysis Results

Moderator Variable	Groups	Average Effect Size (Hedges' G)	95% Confidence Interval	Q-Value	P-Value
Professional Experience	1-5 years	0.42	0.30 - 0.54	8.25	0.004
	6 years and above	0.58	0.47 - 0.69		
Education Level	License	0.40	0.29 - 0.51	7.90	0.005
	Postgraduate	0.55	0.43 - 0.67		
	Numerical	0.46	0.35 - 0.57	5.80	0.016
Branch	Branches				
	Verbal Branches	0.52	0.40 - 0.64		

In terms of professional experience, the mean effect size of teachers with 1-5 years of experience was 0.42 (95% CI: 0.30 - 0.54), while this value was 0.58 (95% CI: 0.47 - 0.69) for teachers with 6 years of experience or more, and this difference was found to be significant ($Q=8.25$, $p=0.004$). In terms of education level, the average effect size of teachers with bachelor's degree was 0.40 (95% CI: 0.29 - 0.51), while the effect size of teachers with postgraduate education was 0.55 (95% CI: 0.43 - 0.67) and this difference was statistically significant ($Q=7.90$, $p=0.005$). In the branch-based evaluation, while the effect size of numerical branch teachers was 0.46 (95% CI: 0.35 - 0.57), this value was found to be 0.52 (95% CI: 0.40 - 0.64) for verbal branch teachers and a significant difference was observed according to the branch ($Q=5.80$, $p=0.016$). In addition, a low level of heterogeneity was found between the studies ($Q=0.062$, $p=0.803$; $I^2=0.0$). This increases the generalizability of the results and the reliability of the findings. These findings show that teachers' individual and academic backgrounds have a direct effect on their level of competence in lesson planning. Therefore, it can be said that in-service training should be differentiated according to branches and experience level.

The Effect of Teacher Competencies on Lesson Planning Process: Meta- Analytic Findings

Within the scope of this sub-problem, the effect of teacher competencies on lesson planning skills was evaluated by meta-analysis method. The reason for examining the effect of teacher competencies on lesson planning with meta-analysis method is to reach a general and stronger conclusion by combining the results obtained from different independent studies. This methodology reduces the potential methodological weaknesses of individual studies and reveals the effect of teacher efficacy on lesson planning in a more reliable and comprehensive way. Therefore, the effect of teacher competencies on lesson planning was determined by calculating the effect sizes and confidence intervals of the studies included in the analysis. The results are presented in Table 4.

Table 4. Effect Size Values for the Effect of Teacher Competencies on Lesson Planning

Study No	Year	Effect Size (Hedges' g)	95% Confidence Interval	Research Methodology
TY1	2016	0.54	0.42 - 0.66	Quantitative
TY2	2018	0.49	0.37 - 0.61	Qualitative
TY3	2020	0.56	0.44 - 0.68	Mix Type
TY4	2022	0.52	0.40 - 0.64	Quantitative
TY5	2023	0.47	0.35 - 0.59	Experimental

According to the data presented in Table 4, the effect of teacher competencies on lesson planning is generally at a medium-elevated level. The effect sizes ranged between 0.47 and 0.56, the results were statistically significant, and teacher competencies played a key role in lesson planning processes. This situation reveals that increasing the competency levels of teachers will improve the effectiveness and quality of lesson plans. In addition, the consistency between the findings provides a strong basis for the generalizability of the results. Moreover, these findings suggest that increasing teacher competencies can positively affect not only student achievement but also the quality of planning processes. The consistency between the findings increases the reliability of the analysis.

Trends Based on Meta-Analysis Findings of Studies Conducted in Türkiye in the Last Decade

Within the scope of this sub-problem, the general trends of 25 studies conducted in Türkiye in the last 10 years and included in the meta-analysis were evaluated in terms of publication year, research method, sample size, study region and cities, and education levels. Detailed results of the evaluations are given in Table 5.

Table 5. Detailed General Trends of Studies in the Last 10 Years

Feature Assessed	Category.	Number of Studies	Average Effect Size (Hedges' G)
Year of Publication	2015-2019	12	0.47
	2020-2025	13	0.52
Research Methodology	Quantitative	14	0.50
	Qualitative	6	0.46
	Mix Type	5	0.53
Sample Size	0-100	8	0.45
	101-300	12	0.49
	301 and above	5	0.54
	Marmara	9	0.51
Work Zone	Central	7	0.48
	Anatolia	5	0.50
	Aegean	4	0.46
	Other Region.	6	0.47
Teaching Level	Primary School	8	0.50
	Middle School	6	0.51
	High School	5	0.52
	University	5	0.52

Table 5 shows that the average effect size of the studies conducted between 2020-2025 (Hedges' $g=0.52$) is higher than the previous period (2015-2019, Hedges' $g=0.47$). According to the research methods, it was determined that mixed-method studies (Hedges' $g=0.53$) had a higher effect size compared to quantitative (Hedges' $g=0.50$) and qualitative studies (Hedges' $g=0.46$). In terms of sample size, it is noteworthy that studies with a sample size of 301 and above (Hedges' $g=0.54$) have a higher effect size compared to other groups. In the regional analysis, it was determined that the effect size of the studies in the Marmara Region (Hedges' $g=0.51$) was higher than the other regions. In terms of educational levels, it was observed that studies conducted at the university level (Hedges' $g=0.52$) reached a higher average effect size compared to other educational levels. These statistical results reveal the factors according to which research trends in teacher competencies and lesson planning vary and provide guiding information for future studies. Regionally, Marmara regional studies ($g=0.51$) stand out, while university level studies ($g=0.52$) have a higher effect size in terms of educational level. These results reveal that lesson planning competencies vary at different levels of education and that a more structured planning culture has developed especially in higher education.



Figure 1. Change in Effect Size by Year

To present these trends in a stronger and more comprehensive way, graphs were added to visually present the changes over the years, methodological comparisons were made in detail, and common themes of the studies in the last 10 years were identified through content analysis. The content sections of the 25 studies included in the meta-analysis were carefully examined and a thematic analysis was performed on the qualitative data. The content analysis was formed by systematically classifying the recurring thoughts and emphases obtained from the introduction, findings, discussion and conclusion sections of the studies. Through this analysis, prominent themes about teacher competencies and lesson planning processes were identified and their frequencies were reflected in the table.

Table 6. Content Analysis Findings: Common Themes

Theme No	Theme Title	Content Summary	Frequency
1	Program Literacy Level	It was stated that teachers' level of knowledge about curricula was limited and that this level was effectively reflected in the lesson planning process.	10
2	Difficulties Encountered in Lesson Planning Processes	There are difficulties in writing target behaviors, alignment of assessment and evaluation, and differentiated instruction.	7
3	Professional Development Needs	It was determined that in-service training should be increased, and that teachers' professional development needs are intense.	12
4	Differences by Grade and Branch	Competencies vary according to teaching levels and branches, and the level of structuring varies.	6

Investigation of Teachers' Lesson Planning Competencies According to Their Professional Experience, Education Level and Branches

As for the last sub-problem of the study, the differences between teachers' lesson planning competencies according to their professional experiences, educational levels and branches were examined. The main reason for including this sub-problem in this study is that the effect of individual professional characteristics of teachers -especially factors such as experience, education level and branch area- on their lesson planning competencies is frequently emphasized in literature. In fact, it is suggested that the pedagogical experiences that teachers gain as their length of service increases enable them to structure the course content more effectively (Darling-Hammond, 2006). In addition, it is stated that postgraduate education processes contribute to the planning process by increasing teachers' theoretical knowledge and curriculum literacy level (Shulman, 1987). Differences between disciplines, on the other hand, cause diversity in planning practices reflected in teaching processes due to the unique structure of each discipline. Therefore, analyzing these variables enables a deeper understanding of teacher competencies and provides data-based contributions to educational policies. In line with the findings of the 25 studies included in the meta-analysis, the contributions of these variables to the effect sizes were analyzed. Table 5 below presents the effect size distribution according to these variables.

Table 7. Effect Size Distribution According to Teacher Characteristics

Variable	Subcategory	Number of Studies	Average Effect Size (Hedges' G)
Professional Experience	0-5 Years	9	0.48
	6-10 Years	8	0.50
	11 Years and Over	8	0.53
Education Level	License	15	0.49
	Master's Degree	7	0.52
	PhD	3	0.55
	Classroom Teaching	6	0.51
Branch	Turkish / Literature	5	0.49
	Mathematics / Science	8	0.50
	Other (Social, Foreign Language, etc)	6	0.46

As seen in Table 7, as the professional experience of the teachers increases, the effect size related to lesson planning competencies increases. Teachers with 11 or more years of experience (Hedges' $g=0.53$) have a higher average effect size than the other groups. In terms of educational level, it is noteworthy that teachers with postgraduate education (especially those with doctoral level, Hedges' $g=0.55$) have higher lesson planning competencies. In terms of subject matter, classroom teachers and numeracy teachers have similar levels of lesson planning efficacy; however, the average effect sizes of social studies and foreign language teachers are relatively lower. These results reveal that teachers' individual professional characteristics have a significant effect on their lesson planning competencies.

DISCUSSION, CONCLUSION and RECOMMENDATIONS

The meta-analysis conducted within the scope of this study provided a holistic framework for the findings of the studies conducted in Türkiye in the last decade on teachers' lesson planning competencies and curriculum literacy levels. The data obtained revealed that teachers showed a moderate level of competence in lesson planning processes, while their curriculum literacy was supportive of these competencies but differed in terms of various variables.

The effect sizes obtained in the study are generally at a moderate level and show that teachers' knowledge and skills related to the lesson planning process are sufficient at the application level, but there are areas for improvement. This situation reveals the need to review both the quality of teacher training processes and the scope of in-service training. The fact that studies published after 2020 have higher effect sizes suggest that the updates made in teacher education policies in recent years have had a positive impact on the field. This finding supports the studies of researchers such as Darling-Hammond (2006) and Avalos (2011) emphasizing the importance of continuity in teacher development.

According to the findings of the study, as the education level of the teachers increased, their lesson planning competencies also increased. The fact that the effect size values of teachers with doctoral level education were higher than the other groups indicates that the integration of theoretical knowledge and practical skills contributes positively to the lesson planning process. This finding is in line with Shulman's (1987) concept of pedagogical content knowledge. Shulman stated that it is not enough for teachers to only know the content, they should also master pedagogical strategies to transfer this knowledge effectively.

In the analyses conducted according to the branches, it was seen that classroom teachers and numeric field teachers had similar levels of lesson planning competencies, while social field and foreign language teachers had lower effect sizes. This finding reveals that interdisciplinary differences are reflected in the lesson planning process and that each branch has unique dynamics. Therefore, teacher education programs need to be restructured in a way to provide branch-specific planning skills.

The themes obtained based on content analysis also support quantitative findings. Teachers' limited knowledge of curriculum literacy causes them to have difficulties in structuring lesson plans effectively. In addition, the difficulties encountered in areas such as writing target behaviors,

the appropriateness of assessment and evaluation tools, and differentiated instructional practices make the need for professional development even more visible (Koca, 2020; Akpınar & Aslan, 2019; Özdemir, 2022). In some studies, it was stated that pre-service teachers had difficulty in setting goals in accordance with program competencies during the planning process and had deficiencies in associating measurement tools with outcomes (Çelik, 2019; Yıldız, 2020; Demirtaş, 2021).

In other studies where teachers' needs for professional development were frequently emphasized, it was revealed that planning processes were not based on patterns that combine theory and practice, therefore, the readiness levels of pre-service teachers differed and coordination could not be achieved in terms of curriculum literacy (Sönmez & Demir, 2020; Koç, 2021; Güler & Kılıç, 2018). In addition, it is among the striking findings of some studies that teachers do not include active learning strategies sufficiently while preparing lesson plans and student-centered structures are limited in the plans (Aydın, 2021; Kaya & Yıldırım, 2022). In line with the results obtained, it can be said that teachers' professional experience also has a determining effect on their lesson planning competencies. It was observed that as the duration of experience increased, teachers approached the planning process with a more holistic and systematic perspective. This shows that experience can turn into pedagogical competence when blended with knowledge (Şahin & Kurt, 2023).

In conclusion, while this meta-analysis revealed that teachers' lesson planning competencies differed depending on variables such as educational level, professional experience and branch, curriculum literacy is an area that supports these competencies but still requires development. The findings indicate that teacher education policies should be reshaped, curriculum literacy should be strengthened, and in-service training should be structured in this axis. In addition, taking interdisciplinary planning differences into consideration and focusing on teachers' individual development processes would be a strategic step towards improving the quality of education.

Accordingly, the content of teacher training programs should be restructured, and pre-service teachers should be provided with systematic and practical training to develop curriculum literacy. For teachers to overcome the difficulties they experience in lesson planning processes, it is important to integrate practice-based content into the curriculum in areas such as measurement and evaluation, target behavior identification and activity selection. Providing in-service training programs differentiated according to teachers' experience, branches and individual needs will yield more effective results in terms of professional development. In addition, it is recommended that teachers' performances related to planning processes should be evaluated periodically and these processes should be supported by methods such as self- evaluation and peer evaluation.

Limitations of the Study

Although this study offers a wide-ranging synthesis of 25 empirical studies conducted in Türkiye, some limitations should be acknowledged. First, the meta-analysis only included studies published in peer-reviewed journals, excluding theses and non-indexed publications. Second, the concept of curriculum literacy was operationalized based on the criteria of the included studies, which may vary slightly in definitions and measurements. Third, publication bias could not be eliminated, although statistical methods were used to detect it. Finally, the contextual diversity of the studies, in terms of geographical region, teacher profile, and school characteristics, may limit the generalizability of the findings.

Recommendations

Accordingly, the content of teacher training programs should be restructured, and pre-service teachers should be provided with systematic and practical training to develop curriculum literacy. For teachers to overcome the difficulties they experience in lesson planning processes, it is important to integrate practice-based content into the curriculum in areas such as measurement and evaluation, target behavior identification and activity selection. Providing in-service training

programs differentiated according to teachers' experience, branches and individual needs will yield more effective results in terms of professional development. In addition, it is recommended that teachers' performances related to planning processes should be evaluated periodically and these processes should be supported by methods such as self-evaluation and peer evaluation.

Considering the differences in lesson planning according to the levels of education, level-specific teaching strategies and planning models should be developed. In this way, teachers will gain planning skills appropriate to the level they work at. This approach will also be a crucial step to increase the quality of education. Finally, it is suggested that digital tools and technological applications should be utilized more to improve teachers' planning competencies. Introducing pre-service teachers to digital planning tools will both improve their technological competencies and help them design lessons in accordance with the needs of the age. This study is an academic mirror of the lesson planning processes of teachers in Türkiye. Not only numerical data, but also the hidden meanings in education have been unearthed. Each data is a scientific step taken to get one step closer to the reality of classrooms. This journey is a guide not only for teachers but also for everyone who believes in a better education system.

Contribution of the Study

This study is an academic mirror of the lesson planning processes of teachers in Türkiye. Not only numerical data, but also the hidden meanings in education have been unearthed. Each data is a scientific step taken to get one step closer to the reality of classrooms. This journey is a guide not only for teachers but also for everyone who believes in a better education system. By integrating quantitative synthesis with content analysis, this study enriches the understanding of curriculum literacy and planning skills in a dynamic and evidence-based manner. The originality of the study lies in its dual focus on two closely related constructions and its contribution to the formulation of targeted, research-based teacher development initiatives.

Ethics Committee Information

Since the meta-analysis method is preferred in the study, ethics committee permission is not required.

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Investigation of Teachers' Perspectives on Inclusive Education Practices in the context of Refugee Students

Ali MAZI¹Fikriye KANATLI ÖZTÜRK²

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Abstract

The aim of this study is to examine the perspectives of primary school teachers on classroom inclusive education practices in the context of refugee students' education. This research employs a case study approach, one of the qualitative research designs. The study group consisted of 20 primary school teachers and was formed through purposive sampling, based on voluntary participation. During the analysis of the data, a content analysis technique was used. The study demonstrates that the interplay between planning processes, professional development needs, encountered obstacles, in-school collaboration, and resource utilization is pivotal in fostering a holistic and inclusive learning environment for refugee students. It may be recommended to provide teachers with more qualified in-service training on inclusive education programmes.

Keywords: Inclusive education, refugee education, teacher, practices, perspectives.

INTRODUCTION

In recent years, millions of people have been forced to relocate due to armed conflicts, natural disasters and economic difficulties in many countries around the world (Diaconu & Grecu, 2023). This has resulted in a significant increase in the number of refugees seeking asylum in other countries. The migration of refugees results in significant shifts in the social and societal structures of nation-states (El Khoury, 2024). The rapidity of this social transformation gives rise to a multitude of issues. In particular, refugees encounter difficulties in the language, cultural and educational contexts of the countries to which they migrate (Svensson, 2024). Education systems perform a crucial function in providing effective services to these newly arrived migrant communities (Emery, Spruyt & Van Avermaet, 2024). Students of refugee backgrounds face several challenges, including language barriers, cultural differences and traumatic experiences in the countries from which they have migrated (Akef, Poyrazli & Quintero, 2024). These students require inclusive educational environments and activities to overcome these challenges. Inclusive education represents a pedagogical approach that upholds the right of each individual to access an equitable and respectful education and that strives to facilitate the integration of students with diverse abilities and learning needs into a single educational environment (Mazi, 2023).

Inclusive education facilitates the integration of these students into the education system and their acquisition of a place in society (Walton & Engelbrecht, 2024). This model, which aims to prevent discrimination and exclusion in education, encourages the creation of learning environments that maximise the potential of all students (Khalil, Slade & Prinsloo, 2024). Inclusive education practices are aimed at all students with many disadvantages, including refugee students, students with special educational needs, and students with different cultural and linguistic backgrounds. To facilitate success in education for refugee students, it is not only necessary to ensure physical access but also to provide social and affective support (Mazi, 2023).

¹Dr., Ministry of National Education, Ankara, Türkiye, maziali.46@gmail.com, orcid.org/0000-0001-9188-8583

²Asst. Prof. Dr., Hatay Mustafa Kemal University, Faculty of Education, Hatay, Türkiye, fikriyekanatli@gmail.com, orcid.org/0000-0003-4513-3686

Inclusive education in the context of refugee students depends on teachers' approaches, attitudes, and perceptions (Balık & Ozgun, 2024). Teachers are pivotal in addressing the diverse educational and psychosocial needs of refugee students (Abu Khudair et al., 2024). However, working with refugee students can also present a range of challenges for teachers (Nazaruk et al., 2024). Language differences, traumatic backgrounds and socio-cultural adaptation issues are among the key challenges teachers encounter when planning and implementing educational processes (İçel, Ocak & Baysal, 2024). In this context, teachers' attitudes towards inclusive education directly influence how refugee students are integrated into the education system and their cognitive and affective development. The effectiveness of these social and emotional supports depends on teachers' approaches, attitudes, and perceptions toward refugee students.

The philosophy of inclusive education is based on the premise that educational systems should be structured in a manner that is responsive to the diverse needs of all individuals (Rapp & Corral-Granados, 2024). This approach challenges the notion that differences should be viewed as impediments and instead emphasises their inherent value as a source of diversity and richness. This initiative is designed to ensure the comprehensive and efficacious involvement of students with special needs and from diverse cultural or socio-economic backgrounds in the educational process (Eden, Chisom & Adeniyi, 2024). The efficacy of inclusive education practices is contingent upon the attitudes, knowledge, and skills of the teachers involved in the process (Elwakil, 2024). Teachers have a pivotal role in managing diversity within the classroom setting and developing strategies to meet the unique needs of each student (Larios & Zetlin, 2023). Consequently, teachers' perspectives and experiences in inclusive education serve as a crucial data source for gauging the efficacy and long-term viability of this process. A positive perception of inclusive education among teachers can have a beneficial impact on both students' academic achievement and social integration (Schwab, Resch & Alnahdi, 2024). A review of the literature on this topic reveals the existence of studies (Becker, 2024; Erdem, 2017; Jia, Tan & Santi, 2022; Kaysılı, Soylu & Sever, 2019; Kazu & Deniz, 2019; Kiremit, Akpınar & Tüfekci Akcan, 2018; Koukou, Marinou & Rapti, 2024; Latorre-Coscolluela, Sin-Torres & Anzano-Oto, 2024; Letzel-Alt & Pozas, 2024; Mazı, 2024; Valek, 2024) examining the views of teachers in the context of inclusive education. It is now widely acknowledged that Türkiye has been experiencing an influx of migrants from the Middle East, Europe and Asia as a consequence of the adverse political and economic developments occurring in its immediate vicinity (Kaya Erdem & Bilge, 2024). Türkiye represents one of the countries with the highest number of refugees in the world and is regarded as a safe haven for those seeking asylum (McAuliffe & Oucho, 2024). The presence of over three million refugees in Türkiye has had a significant impact on the socio-economic structure and education system of this country. While children of refugee families have been integrated into the Turkish education system, it is evident that the system is unable to accommodate such a large influx of students. Consequently, a range of programs (Piktes, together in education, etc.) has been introduced to integrate refugee students into the education system (Taneri & Ugur, 2024). While these programs have demonstrated some positive outcomes, it is crucial to assess their long-term effects on the system. In this context, the effects that Türkiye, Spain, Greece, Croatia and Italy are exposed to due to their status as countries on the migration route, and Germany, UK, Sweden, etc., which are seen as destination countries, may manifest differently in terms of perceptions towards refugees and their integration into the education system (Sharma-Brymer et al., 2024). This study considers the response of Türkiye's education system, the country most frequently selected by refugees as a destination during their migration journeys, to refugee students. It is important to examine the innovations in in-class activities, the difficulties experienced, the supports provided by inclusive education, and the solutions offered to the problems experienced, as well as the opinions of teachers on administrative and family supports in the education of refugee students. In this direction, it is posited that, in conjunction with assisting teachers in enhancing the academic success of all classes, particularly refugee students within their respective lessons, this approach will contribute to the cultivation of cultural awareness and sensitivity among all students. It is further anticipated that this will serve to eliminate barriers to language and communication, promote the equitable participation of all individuals in educational settings,

provide support to students psychosocially, and facilitate the development of more effective inclusive education practices in lessons. The current study aims to reveal the opinions of teachers working in educational institutions affiliated with the Ministry of National Education (MoNE) in Ankara province on inclusive education activities. In this direction, the research questions of the study are presented below.

RQ1: What are the inclusive education practices of primary school teachers in the classroom in the context of educating refugee students?

RQ2: What are the problems that teachers face while carrying out inclusive education activities?

RQ3: What kind of training can be designed to provide solutions to the problems teachers encounter in inclusive education activities?

RQ4: What support do teachers want from school administrations in their inclusive education activities?

RQ5: What kind of activities can be carried out for the cooperation of parents in inclusive education activities?

METHOD

Model

This study employs the case study approach, one of the qualitative research designs. The case study is a research approach that examines a contemporary phenomenon within its natural context, which allows for an investigation of the phenomenon in question in its real-life setting, when boundaries between a phenomenon and its context may not be readily discernible (Yıldırım & Şimşek, 2021). The study reflects the inclusive education practices employed by primary school teachers working in Ankara province in their lessons, to identify the challenges experienced by refugee students in classroom settings and the proposed solutions to these issues. Furthermore, it explores the provision of support to primary school teachers for inclusive education, with a focus on administrative and parental participation. Therefore, a case study was deemed the most appropriate methodology for this qualitative research article, which was conducted in the context of the country and focused on gathering primary school teachers' perspectives on their inclusive education practices.

Study Group

The study group consists of 20 primary school teachers working in primary schools in Ankara province in the 2023-2024 academic year. In the selection of the study group, the purposive sampling method was used by considering the status of receiving or not receiving any inclusive education training (Yıldırım & Şimşek, 2021).

Table 1. Descriptive statistics

Variables	Groups	N	(%)
Gender	Female	10	50
	Male	10	50
Age	22-25	2	10
	26-30	3	15
	31-35	5	25
	36 and older	10	50
Seniority	1-5	2	10
	6-10	3	15
	11-15	6	30
	16-20	4	20
	20 and more	5	25
Have you received any inclusive education activity?	Yes	20	100
	No	0	0
Code Name	Male Teacher 1 (MT1)*	Female Teacher 1 (FT1)*	

As illustrated in Table 1, 50% of the teachers participating in this study are female, while 50% are male. Upon examination of the age distribution of the teachers participating in the study, it becomes evident that there are two teachers (10%) between the ages of 22 and 25, three teachers (15%) between the ages of 26 and 30, five teachers (25%) between the ages of 31 and 36, and ten teachers (50%) aged 36 and above. Furthermore, 2 (10%) of the participating teachers have between one and 1-5 years of professional experience, 3 (15%) have between 6-10 years of professional experience, 6 (30%) have between 11-15 years of professional experience, 4 (20%) have between 16-20 years of professional experience, and 2 (10%) have over 20 years of professional experience. All teachers in the study received inclusive training. The following examples illustrate a training in which teachers participated.

Piktes project: The endeavours undertaken by the MoNE to facilitate the access of Syrian children under temporary protection to education have been endorsed and financially supported by the EU. In the context of the project, which was supported by UNICEF to create equal opportunities in education, the ministry was provided with financial resources from the fund that had been established in cooperation with the MoNE. The Piktes project is responsible for the establishment of an educational environment conducive to Syrian students' learning, the provision of educational materials, and the recruitment of Turkish teachers and teachers specialising in remedial education. Teacher training initiatives aimed at enhancing the quality of education are also encompassed within the purview of the project (Ulukuş & Tümtaş, 2023).

Inclusive education teacher training module teacher training project: The execution of the project was undertaken by the MoNE in collaboration with UNICEF, with the coordination of Erciyes University. The objective of the programme is to enhance the capacity of education personnel to provide inclusive education to all children, with a particular focus on refugee children under temporary protection, and to ensure that every child has access to quality education (MoNE, 2022).

Together in education: The overarching goal of the "Inclusive early childhood education for children with disabilities project", which is being implemented with the financial support of the EU and Türkiye, is to enhance access to early childhood education and primary school for children with disabilities aged between 3 and 7. This objective is being pursued through the provision of inclusive educational programmes of a high standard. The project is being overseen by the general directorate of elementary education of the MoNE, with technical support provided by UNICEF. In this context, the project has the following objectives (Mazı, 2023).

Finally, in Türkiye, the concept of inclusive education is incorporated into the "Expert teacher training program" as a module that facilitates the transfer of strategies and practices to teachers for pupils with diverse needs (MoNE, 2025).

Data Collection Tools

In this part of the study, information about the personal information form and semi-structured information form used in the study is presented.

Personal information form

The personal information form contains questions to reveal information about the participating teachers' gender, age, seniority and status of receiving or not receiving any inclusive education training.

Semi-structured interview form (SSIF)

In the current study, the teachers' opinions about inclusive education activities were obtained through an SSIF developed by the researchers. During the development of the interview form, expert opinion was consulted. The questions asked during the interview are as follows:

- "Which of the inclusive education practices do you implement in the classroom?"

- “What are the problems you experience with your refugee students while implementing your education programs?”
- “What kind of training can be designed to provide solutions to the problems you encounter in your educational practices involving your refugee students?”
- “What support would you like to receive from school administrations in your inclusive education practices that involving your refugee students?”
- “What kind of activities can be carried out for the cooperation of parents in your inclusive education practices that involving your refugee students?”.

Data Collection and Data Analysis

The opinions of the teachers were revealed with an SSIF. The collected data were then organised for analysis. Content analysis was used in the analysis of the collected data. The interviews were held in the schools where the teachers were working. Furthermore, interviews were held with 20 primary school teachers. Interviews were held with volunteer teachers at the schools visited. Interviews started after obtaining permission from the teachers. The interviews lasted 10 to 15 minutes.

The initial step in the analysis of the data was coding. At this stage, coding was conducted by taking into account the relationship between opinions that differ in certain characteristics (Baltacı, 2019). The content analysis technique was utilised to facilitate the identification of themes and coding. Furthermore, the themes and codes obtained as a result of the study conducted by Mazi (2023) were examined and found to be highly consistent with the results of this research. The analysis of the qualitative data collected for the study was conducted utilising the MAXQDA 2024 software, designed for the analysis of qualitative data. Initially, the teacher interview forms were transferred to the program. Subsequently, the data were meticulously examined and coded into meaningful sections, and these codes were then grouped into themes. A more in-depth analysis was conducted by examining the relationships between the codes. In the final stage, the analysis results were reported with the support of visualisation tools.

Reliability and Validity

The following procedures were carried out to ensure the validity and reliability of the study. The procedures were executed in accordance with the results of validity and reliability studies (Erlandson et al., 1993; Lincoln & Guba, 1985; Yıldırım & Şimşek, 2021) within the qualitative research process. In this study, qualitative research was employed, with expert opinion and participant confirmation used to ensure credibility. In this context, the opinion of a professor in the field of primary education who has studied the field of inclusive education was sought as part of the research process. A comprehensive compendium of the views expressed by teachers is provided for transferability. To ensure dependability, the consistency of the qualitative data regarding the themes and sub-themes resulting from the data analysis was compared with that of a doctoral-level expert in primary education. In this context, great care was taken to avoid errors that would occur throughout the study. Finally, in the confirmability stage, the situation was checked in the conclusions drawn from the findings generated from the raw data of the study. Furthermore, a cohesive and coherent process was adhered to, encompassing the collection of data, its analysis, and the subsequent derivation of results.

The reliability of the research was determined by employing the equation developed by Miles and Huberman (1994). The reliability coefficient for the themes and sub-themes that were identified was found to be .90. In the final stage of the process, the themes and sub-themes thus established were collated into tables. Subsequently, the cloud of codes, comprising a series of themes and sub-themes, was presented visually. The MAXQDA 2024 qualitative data analysis software was utilised for the analysis of the collected data.

RESULTS

In this part of the study, the answers given to the questions asked to the teachers are analysed and presented in the tables. Moreover, direct quotations from teachers' answers to the relevant question are given below the tables.

Q1: "What are the inclusive education practices of primary school teachers in the classroom in the context of educating refugee students?". The theme was determined by analysing the keywords derived from what teachers believed. Planning for students in inclusive education activities was the apparent thematic unity, hence generating the theme, 'planning.' The obtained data are presented in Table 2.

Table 2. Planning

Theme	Sub-theme	f
Planning	In-class activities	8
	Individualized study	5
	Culture and language activities	4
	Participation	3

When the relevant table is examined, it is seen that the theme that teachers believe contribute positively to students through inclusive education activities vary. Teacher opinions regarding the theme of planning are as follows:

"Individual study, that is, studies in the fields of speaking, understanding and hearing, makes a positive contribution to my disadvantaged students." MT8.

"Conducting individual studies makes a positive contribution to refugee students." MT2.

"Approaching this student with love and compassion has always made a positive contribution. Giving the opportunity to speak, even if just a few sentences every day, is very effective." FT3.

"Preparing an inclusive in-class activities plan for all students in my class contributes positively to students' learning." FT4.

"Getting the child to speak with more than one word and developing his/her imagination by asking scrambled questions." FT8.

"I first determined which sounds a student with language and developmental delay used instead of the 8 consonant sounds (f, s, t, k, ç, ş, h, p) that he/she could not produce. Most of them are Turkish letters of the alphabet. Later, during reading and writing activities, I applied speech therapy directed to the student's articulation disorder (15+15 minutes a day). Towards the end of the year, it was observed that awareness about the sounds he/she could not produce increased and the student started reading. Additionally, after the implementation of healthy eating practices applied to students, by the end of the year, it was observed that the student, who couldn't consume solid food up to the first grade and had to be fed with baby food, eagerly ate meals and other fruits like carrots." FT9.

Q2: "What are the problems you experience with your refugee students while implementing your education programs?". Responses were analysed, and codes were determined for the obstacles while implementing inclusive education programs. The data obtained are presented in Table 4.

Table 3. Obstacles

Theme	Sub-theme	f
Obstacles	Language barrier	11
	Communication	5
	Affective factors	4

When the relevant table is examined, it is seen that in the sub-themes, teachers draw attention to the problems experienced with refugee students while implementing the education programs, such as language barrier, communication and affective factors. Teacher opinions on the theme of problems encountered are as follows;

"Children who have experienced loss or neglect become very aggressive and difficult to communicate with." FT3.

"We are having problems with time because refugee students aren't few in number." MT7.

"Syrian students do not know any Turkish when they start school." FT2.

"The child becomes anxious while doing activities due to his/her fears." MT10.

"I have difficulty concretizing abstract topics due to lack of materials." FT9.

"Refugee students do not speak Turkish and therefore fall behind in lessons." FT1.

Q3: "What kind of training can be designed to and provide solutions to the problems you encounter in your educational practices, including your refugee students?". Responses under the theme referred to as "professional development" were analysed, and codes were determined for the types of professional development that overcome the problems teachers encounter while implementing inclusive education. The data obtained are presented in Table 5.

Table 4. Professional development

Theme	Sub-theme	f
Professional development	In-service training	5
	Seminars	5
	Language education	5
	Counsellor	5

When the relevant table is examined, it is seen that the themes that will provide solutions to the problems teachers encounter while implementing inclusive education are in-service training, seminars, and language education. Teacher opinions on the theme of training to raise awareness are as follows:

"Psychologist services should be provided to schools. Counsellors say that they are not psychologists." FT5.

"For example, the primary school for the hearing impaired should be a separate school in our city. Students' attendance at this school should be mandatory. In this way, they can participate in different socio-cultural activities in those schools and a positive contribution can be made to their development." MT8.

"I think problem will be solved through in-service training activities." MT6.

"Educational seminars should be held every week for parents (especially in rural areas)." FT1.

"Counselling teachers should organize seminars for parents in schools. Activities can also be conducted with students on the issue because such problems can be solved more easily with parent-student-teacher cooperation." MT2.

"Special classes can be established in every school for refugee students." FT6.

"To further increase parent-teacher cooperation seminars by providing the necessary information to raise family awareness." FT4.

Q4: "What support would you like to receive from school administrations in your educational practices that include your refugee students?". The themes accumulated under the main theme, 'resource', were determined by analysing keywords regarding the support teachers expect from school administrations while implementing inclusive education. The data obtained are presented in Table 6.

Table 5. Resource

Theme	Sub-theme	f
Resource	Material	7
	Language assistant	6
	Drama hall	2

When the relevant table is examined, it is seen that the sub-themes regarding the support that teachers expect from school administrations while implementing inclusive education are focused on material, language assistant and drama hall. Teacher opinions on the theme of expected support are as follows:

"I would like support in preparing the necessary environment and training materials." MT3.

"In order to play games freely, there must be plenty of equipment and a room similar to a drama hall in every school." FT1.

"Support systems within the school should be developed to develop a positive school climate." MT2.

"Increasing the number of materials that will support these children in education and receiving language assistant in cases where communication with parents is difficult." FT7.

"Language assistant in the school can be recruited through the collaboration between parents and teachers. FT8.

"Due to the busy schedule, it is not always possible for the teacher to pay enough attention to the students during the lesson. In order to solve this problem, having the personnel to assist in the classroom (under the supervision of the teacher) may be a support that can be requested from school administrations to help refugee students adapt to the classroom." FT9.

Q5: "What kind of activities can be carried out for the cooperation of parents in your educational practices that include your refugee students?" The theme, 'solidarity', was determined by analysing sub-themes regarding activities that teachers could carry out in cooperation with parents of refugee children while implementing inclusive education activities. The data obtained are presented in Table 7.

Table 6. Solidarity

Theme	Sub-theme	f
Solidarity	Psychosocial support	8
	Home visits	6
	Cultural activities	6

When the relevant table is examined, it is seen that the sub-themes regarding the activities that can be carried out for the cooperation of parents while implementing inclusive education activities focus on psychosocial support, home visits, and cultural activities for parents. Teacher opinions on the theme of parental cooperation are as follows:

"Including parents in education and ensuring parent-teacher-student cooperation." FT3.

"Seminars or cultural activities can be organised for parents." FT4.

"Mother-child, father-child, sibling cultural activities can be organised to help the parent understand exactly how the child feels in the classroom." FT1.

"Meals or breakfasts can be organised to establish better relationships with parents." MT3.

"2-week parent meetings can be organised to discuss progress, stagnation and setbacks in the conducted activities. Emphasis should be placed on the importance of activities to be carried out at home, and parents should be informed about distant and immediate goals. Regular meetings can also be arranged with the parent counselling unit." FT8.

"Parents can be referred to relevant units when necessary." MT1.

"It is important for the teacher to refer the student to the health/counselling unit when deemed necessary in terms of monitoring the healthy development of the child. If the parent does not take this referral seriously, it may be an indication that the child is being neglected, which is a situation that should be taken into consideration." FT9.

In this study, the themes and subthemes obtained from the analysis of the data were visualised through the MAXQDA 2024 qualitative data analysis program. Figure 1 displays the visual representation of the themes, sub-themes and codes.



Figure1. Cloud of Codes

CONCLUSION and DISCUSSION

This study aims to examine the perspectives of primary school teachers on classroom inclusive education practices in the context of refugee students' education. This study explores the opinions of primary school teachers on inclusive education practices in the context of refugee students. The analysis is informed by five main focal points. It has been determined that these factors comprise planning processes, professional development needs, obstacles encountered, solidarity and resources used. In this context, the initial investigation has been conducted into how teachers formulate their lesson plans and the extent to which they endeavour to develop strategies that are aligned with the needs of refugee students. In the ensuing discourse, the focus has been directed towards an analysis of the professional development opportunities that have been identified as conducive to the process under discussion, and the identification of any gaps that have been expressed by teachers. Subsequently, the challenges encountered in the field, including language barriers and cultural differences, and their repercussions on pedagogical practices, have been examined. Furthermore, the role of school administrations and available support mechanisms have been examined. The efficacy of inclusive education practices has been ascertained through the utilisation of resources such as tools and equipment, guide documents, and support programs that teachers employ in the classroom. The study revealed the manner in which the five main focal points intersect with each other and their contributions to the creation of a holistic learning environment. This configuration serves to elucidate both the systematic presentation of the findings and the focal points of the ensuing discussion.

The initial conclusion of the study was that primary school teachers primarily focused on the planning process in inclusive education practices for the education of refugee students. It was observed that teachers diversified classroom activities, designed individualised learning environments, developed methods that encouraged participation in the lesson, and focused on activities for cultural and language education during the education process. In this context, the experiences teachers gain during the planning phase are instrumental in informing their decisions regarding implementation. The integration of refugee students into academic and social domains

is a multifaceted process that necessitates a comprehensive approach. A review of the extant literature on this issue reveals the research conducted by Vlasta, Patrícia and Štefan (2021) to be of particular interest. The present study underscores the significance of Slovak teachers employing individualised work plans in their lessons for inclusive education practices. Furthermore, Kozleski and Waitoller's (2010) theoretical research posits that teachers, in their capacity as sociocultural mediators, facilitate student participation in classroom and school activities, thereby enabling the creation of experiences. The results of these studies are similar to the results of the current study.

The obstacles encountered by primary school teachers in implementing inclusive education practices can be attributed to a number of factors, including communication challenges, affective factors, and language barriers. The results of the present study indicate that, upon examination of the pertinent literature, in circumstances where communication obstacles diminish teacher-student interaction, markedly diminish teachers' professional motivation, and language barriers impede students' participation in the classroom, these components interweave, engendering a negative dynamic that underscores the imperative for inclusive education processes. It can be posited that this dynamic exerts a deleterious effect on teachers' sense of self-efficacy and students' sense of belonging and accessibility to education. Therefore, it indicates that these dynamic causes difficulties in both pedagogical and social dimensions. Upon examination of the relevant literature, it becomes evident that there are studies (Kaysılı, Soylu & Sever, 2019; Latorre-Coscolluela, Sin-Torres & Anzano-Oto, 2024; Mazı, 2023; Mazı, 2024; Valek, 2024) that align with the results of this research. It is anticipated that this situation will contribute to the existing literature on the subject.

A further result of the study is that primary school teachers focus on professional development to solve the problems they encounter in inclusive education practices in the context of educating refugee students. Teachers' participation in in-service training and seminars on inclusive education has been noted, along with an emphasis on the significance of language instruction and the acquisition of consultancy services in this area. A review of the literature reveals that studies of countries in similar situations have yielded results that support the findings of this research. For instance, the study conducted in Spain concluded that joint projects should be developed for teachers to facilitate the implementation of innovative processes in the context of inclusive education (Latorre-Coscolluela, Sin-Torres & Anzano-Oto, 2024). Furthermore, Becker (2024) in Germany, the integration of an intercultural education programme within the school curriculum and the implementation of diversity training for educators and school staff were both recommended. Valek (2024) posits that the current education system presents certain challenges to the implementation of inclusive educational practices, as evidenced by findings from his study conducted in Croatia. The conclusions of these studies are consistent with those of the present study. It is anticipated that this will contribute to the existing literature on inclusive education.

Primary school teachers emphasise the significance of school administrators developing resources for inclusive education practices, particularly in the context of refugee students. Furthermore, teachers highlighted the significance of meticulously preparing the requisite educational environments for the implementation of activities with in-class materials and language assistant support. A review of the extant literature on this subject reveals the existence of studies conducted in various countries. A particularly noteworthy study is that of Huilla, Lay and Tzaninis (2022), which was conducted in the Netherlands, Finland and Iceland. This study has revealed that, in all three countries, school administrators have an essential role to play in the implementation of inclusive education. Furthermore, the study conducted in Türkiye by Mazı (2023) revealed the importance of leadership qualities among school administrations in creating an inclusive school environment, as reported by both teachers and parents. The results of the studies conducted in different countries corroborate those of this study. It is believed that this study will contribute to the existing literature on this topic.

The final result of the study demonstrates that primary school teachers consider inclusive education practices to be of significant importance for the education of refugee students, as well

as for parent cooperation and solidarity processes. It was also determined that teachers focused on parents benefiting from psychosocial support, home visits and establishing a connection with cultural activities. Upon examination of the relevant literature, it becomes evident that there are studies (Mazi, 2024; Vlasta, Patrícia & Štefan, 2021; Zelina, 2020) that align with the results of this research. It is crucial to recognise the significance of family involvement and assistance in inclusive educational initiatives, particularly in fostering the cognitive and affective growth of students from disadvantaged backgrounds. In light of the results of the study, several suggestions have been put forth for consideration by researchers and practitioners to enhance future research and practice.

Suggestions

The findings highlight the necessity of implementing multifaceted strategies to enhance educational outcomes for refugee children. Firstly, the deployment of dedicated support personnel within primary school classrooms has been demonstrated to alleviate the burden on teaching staff, thereby enabling them to address the diverse needs of refugee students during activities with greater efficacy. Secondly, the provision of high-quality, ongoing in-service training to primary school teachers on inclusive education programs is imperative to cultivate pedagogical practices that accommodate diverse learning backgrounds and abilities. Thirdly, school administrations should prioritise initiatives that strengthen family-school collaboration. Examples of such initiatives include the organisation of workshops or engagement events to ensure that caregivers are active participants in their children's education. Finally, the development and integration of learning aids that are tailored to the age of refugee students across all grade levels has the potential to bridge accessibility gaps and promote equitable learning opportunities. Collectively, these recommendations emphasise systemic support, professional development, family involvement, and resource allocation as pillars of an inclusive educational framework.

Ethical Approval

Prior to data collection for this study, we obtained permission from the Ethics Committee of Hatay Mustafa Kemal University Institute of Social Sciences (06.02.2024 and 902-01-FR 006). Furthermore, artificial intelligence was not utilised in writing this article. The research was conducted without any ethical violations.

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Sustainable OSH Training for Safety Culture in the Construction Industry: The Case of Izmir Province¹

Sinan VURAL²Orkun DALYAN³Ömer Faruk ÖZTÜRK⁴Mehmet PİŞKİN⁵

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Abstract

Sustainable occupational health and safety training (OHS) aims to minimize workplace risks and foster a strong safety culture through continuous, holistic learning. This study presents a pilot investigation into the relationship between safety culture and OHS practices among technical personnel in the construction sector. Specifically, it introduces and validates a newly developed Safety Culture Assessment Scale (SCAS) tailored to the Turkish construction context.

A face-to-face survey was conducted with 200 technical personnel employed across 20 residential construction projects in Izmir, Turkey. The SCAS underwent exploratory and confirmatory factor analyses to establish its structural validity, and internal consistency was assessed using Cronbach's alpha. Further, criterion-related validity was examined through statistical analyses, including Pearson correlation, Independent Samples t-tests, and one-way ANOVA.

Findings revealed significant relationships between demographic variables and the five core dimensions of safety culture. Strong positive correlations were found between management commitment, OHS training and communication, worker participation and awareness, and OHS reporting ($r = 0.581-0.718$, all $p < 0.001$). These results highlight the critical role of sustainable and targeted OHS training in enhancing safety awareness, improving risk perception, and cultivating a proactive safety culture within the construction industry.

Keywords: construction industry, safety culture, sustainable OHS training, technical personnel, Izmir

INTRODUCTION

Occupational Health and Safety (OHS) is a critical concern in high-risk sectors such as construction, where safeguarding workers' physical and psychological well-being is both a legal obligation and a moral imperative (Jaafar et al., 2017; Thompson & Doran, 2024). Among the many components that influence workplace safety, the concept of safety culture has emerged as a pivotal factor in shaping safety-related behaviors, perceptions, and compliance at both individual and organizational levels (Berglund et al., 2023). Safety culture is commonly defined as the shared values, beliefs, norms, and practices concerning safety, which play a fundamental role in identifying hazards, assessing risks, and implementing effective control measures (Cooper, 1998).

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** Corresponding author

²MSc, Çanakkale Onsekiz Mart University, Occupational Health and Safety Department, Çanakkale-Turkey, sinanvural7@gmail.com, orcid.org/0009-0008-4395-269X

³Ph.D. Student, Çanakkale Onsekiz Mart University, Occupational Health and Safety Department, Çanakkale-Turkey, orkundalyan@outlook.com, orcid.org/0000-0003-4791-9084

⁴Professor Dr., Çanakkale Onsekiz Mart University, Department of Chemical, Çanakkale-Turkey, ofozturk@comu.edu.tr, orcid.org/0000-0002-9244-6805

⁵Associate Professor Dr., Çanakkale Onsekiz Mart University, Food Processing Department, Çanakkale-Turkey, mehmetpiskin@comu.edu.tr, orcid.org/0000-0002-4572-4905

A strong safety culture not only reduces the incidence of occupational accidents and diseases but also enhances employee satisfaction, trust, and organizational productivity (Shaikh et al., 2020). Therefore, promoting a positive safety culture is not merely a technical requirement but a comprehensive strategy that should extend beyond workplace boundaries into broader social consciousness. Empirical studies suggest that structured safety training and participatory engagement are crucial mechanisms for developing and sustaining a safety culture (Bautista-Bernal et al., 2024; Dalyan et al., 2021–2023; Laukkanen, 1999).

Importantly, safety culture is closely linked to behavioral risks in the workplace. Employees' perceptions of safety, their willingness to comply with regulations, and their trust in organizational safety practices influence not only the frequency of incidents but also the effectiveness of risk mitigation efforts (Lari, 2024; Lornudd et al., 2021). However, despite growing scholarly interest, there remains a limited understanding of how safety culture interacts with behavioral risks and worker well-being, especially in the construction industry, where decentralized structures, subcontracting, and variable risk exposures are prevalent (Choudhry et al., 2007; Lingard et al., 2012; Zhou et al., 2015).

Prior studies have highlighted the fragmented nature of construction work, particularly in developing countries, which often results in inconsistent implementation of safety protocols and increased behavioral risks (Alkilani et al., 2013; Mohammadi et al., 2018). The transient workforce, reliance on subcontractors, and inadequate supervision further complicate the establishment of a consistent safety culture, making it difficult to ensure long-term worker well-being (Fang et al., 2015; Goh & Binte Sa'adon, 2015).

Moreover, empirical studies focusing on technical personnel, key actors in operational safety, are particularly scarce, despite their central role in implementing on-site safety measures and maintaining compliance (Guo et al., 2016; Zhang et al., 2015). While some research has explored their situational awareness and behavioral predictors (Hasanzadeh et al., 2017), the majority of OHS literature continues to prioritize managerial or organizational perspectives over the practical insights of frontline technical staff (Chi & Han, 2013; Hinze & Wilson, 2000).

This study aims to address these gaps by investigating the impact of safety culture on behavioral risks and worker well-being, based on survey data from 200 technical personnel employed across 20 residential construction projects in Turkey.

Drawing on a multidimensional framework, the study evaluates various dimensions of safety culture and assesses the interplay between training, risk perception, management commitment, and behavioral outcomes (Cooper, 1998; Neal et al., 2000; Zohar, 1980). The analysis is underpinned by a newly developed and context-specific Safety Culture Assessment Scale (SCAS), which offers a validated instrument tailored to the unique characteristics of the Turkish construction sector, where safety-related behaviors are often shaped by organizational and demographic factors (Choi et al., 2017; Curcuruto et al., 2019).

Prior research indicates that general safety climate tools often fail to capture sectoral and regional particularities (Fuller et al., 2021; Lingard, 2002), highlighting the necessity for localized scales such as the SCAS. In this regard, the scale was developed following a systematic instrument development process (DeVellis, 2016) and is aimed specifically at addressing the challenges encountered by technical personnel, who are frequently underrepresented despite their central role in operational safety (Planek et al., 2014). Moreover, by integrating multiple dimensions of safety culture, including training, communication, participation, and management commitment, the study provides a comprehensive framework to assess behavioral outcomes and well-being in high-risk environments (Christian et al., 2020).

Over the past two decades, OHS research in construction has grown rapidly, focusing on themes such as safety climate, training effectiveness, and organizational behavior (Bautista-Bernal et al., 2024; Choi & Carlson, 2014; Lingard, 2002). While existing tools like the Safety Attitudes Questionnaire and Safety Climate Questionnaire provide useful insights, they often lack regional specificity and fail to capture the complex sociocultural dynamics of developing countries

(Choudhry et al., 2007; Zohar, 2010). These limitations become more pronounced in the context of construction industries, where localized practices, informal labor structures, and variable regulatory enforcement complicate standardized assessments (Geldart et al., 2010; Lingard & Rowlinson, 2005). This underscores the need for localized, industry-specific measurement tools, particularly in the Turkish context, where construction remains a dominant economic sector characterized by inconsistent safety standards and limited integration of safety culture principles (Akbiyikli et al., 2019; Yorio et al., 2015).

Furthermore, while previous studies have examined how demographic factors such as age, gender, experience, and education influence safety behaviors (Han et al., 2019; Neal & Griffin, 2006), and others have analyzed individual- and group-level influences on safety behavior (Cheung & Zhang, 2020; Gao et al., 2016), few have integrated these variables within a holistic framework that assesses safety culture as a dynamic, multi-level construct (Zohar & Polachek, 2014; Choudhry et al., 2007). By incorporating such variables, this research contributes to a more nuanced understanding of how individual and organizational factors jointly shape safety outcomes.

In parallel with the global shift toward sustainable safety management, there has been a growing emphasis on embedding sustainability principles into OHS training and cultural transformation efforts (Goh & Binte Sa'adon, 2015; Reiman & Rollenhagen, 2014). In the construction sector characterized by rapid technological changes, subcontracting chains, and complex workflows, this transformation necessitates participatory, continuous, and context-sensitive safety strategies (Lingard & Rowlinson, 2005; Zou et al., 2007).

Despite regulatory advancements and the increasing use of formalized safety protocols, persistent unsafe behaviors and preventable incidents continue to occur, especially in decentralized and dynamic construction environments (Aksorn & Hadikusumo, 2008; Choudhry et al., 2009). These ongoing issues reveal the inherent limitations of traditional compliance-based safety models and highlight the need for more transformative and culture-driven approaches to occupational safety (Goh et al., 2017; Hinze et al., 2013; Mohamed, 2002). As such, there is a pressing need to move beyond surface-level interventions and to embed proactive, systemic safety mindsets at both organizational and individual levels (Toole, 2002). This study responds to these challenges by:

1. Introducing a validated, context-specific Safety Culture Assessment Scale (SCAS) for the Turkish construction sector,
2. Empirically examining the interrelationship between safety culture, behavioral risk, and worker well-being, and
3. Assessing the moderating effects of demographic and organizational factors on safety perceptions.

The unique contribution of this study lies in its dual focus on measurement innovation and empirical exploration. Unlike prior research that centers on managerial perspectives or generalized safety indicators (Choudhry et al., 2007; Lingard et al., 2010), this study captures the lived experiences of technical personnel, who are often closest to site-level risks but underrepresented in research (Haslam et al., 2005; Teo & Ling, 2006). The findings offer practical insights for designing targeted, sustainable safety interventions and hold relevance for policy-makers, safety trainers, and industry leaders seeking to embed proactive safety practices in high-risk environments (Hinze et al., 2013; Goh & Binte Sa'adon, 2015).

Purpose of the Research

The primary aim of this study is to investigate the relationship between safety culture dimensions and occupational health and safety (OHS) practices among technical personnel in the construction industry. Specifically, the study seeks to:

1. Develop and validate a context-specific Safety Culture Assessment Scale (SCAS) tailored to the Turkish construction sector, with a particular focus on residential projects in Izmir Province,

2. Examine the influence of demographic and organizational variables (e.g., age, education level, experience, firm size) on safety culture perceptions,
3. Explore the interconnections between key dimensions of safety culture, such as management commitment, training and communication, worker participation, and reporting behavior, and their impact on safety-related behaviors and risk perception.
4. Contribute to the development of sustainable and participatory OHS training strategies by identifying cultural and behavioral factors that enhance or hinder the effectiveness of workplace safety programs.

Through this multidimensional approach, the study aims to provide empirical evidence and practical insights that inform the design of context-sensitive, sustainable safety interventions in the construction industry, particularly in developing country contexts where safety practices often remain fragmented and inconsistent.

METHOD

Type of Research

This study was conducted within the framework of a descriptive model using a cross-sectional research design in the quantitative research type. Cross-sectional studies aim to analyze the current situation by collecting data in a specific period (Rindfleisch et al., 2008). Therefore, the findings of the study are limited only to the sample group participating in the research and cannot be directly generalized to a wider population.

Population and Sample Selection

The study population comprises personnel actively involved in twenty specific housing construction projects located in Izmir, Turkey. To create the sample, the researcher employed the purposive sampling method, allowing for the selection of individuals directly pertinent to the research topic, following the approach proposed by Tongco Maria Dolores (2007).

To more accurately assess the perception of safety culture among technical personnel in the construction industry, it was aimed to select individuals with experience in this regard. The data of seven individuals with missing information were excluded from the analysis, resulting in a final study group of two hundred personnel.

Data Collection Tools

The SCAS used in this study was developed based on the eight-stage framework proposed by DeVellis (2016), ensuring methodological rigor and theoretical grounding. The SCAS comprises five main sections:

Section 1: Demographic information (gender, age, marital status, education level, total working hours, and monthly income).

Section 2: Institutional and work-related background.

Section 3: Shift systems and income characteristics.

Section 4: OHS systems implemented at the workplace.

Section 5: Safety culture perceptions measured using 57 items on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Before full-scale data collection, a pilot study with 10 technical personnel was conducted to assess the clarity and practicality of the items. Based on their feedback, several items were revised or removed. The final version of the scale was administered to 200 technical staff working in 20 residential construction projects across Turkey via face-to-face interviews conducted during working hours. Each session lasted 20–25 minutes, and data collectors were trained in OHS and

survey protocols. Participants were informed about the study's purpose, assured of confidentiality, and signed written informed consent. No incentives were provided.

Scale Development Process

The scale development followed these eight steps:

Definition of the Construct:

The construction of safety culture was conceptualized based on literature in occupational safety, drawing from Cooper (1998), Zohar (1980), and Neal et al. (2000), emphasizing dimensions such as training, participation, communication, management commitment, and fatalism.

Item Generation:

An initial pool of 75 items was developed to reflect these dimensions.

Response Format Selection:

A 5-point Likert-type scale (1 = Strongly Disagree to 5 = Strongly Agree) was used.

Expert Review for Content Validity:

Five experts in OHS and psychometrics reviewed the items for relevance, clarity, and redundancy. Twelve items were removed, and six were revised accordingly.

Pilot Testing:

Conducted with 10 technical staff, resulting in the removal of or rewarding of six additional items, leading to a final total of 57 items.

Main Administration:

The revised SCAS was administered to the main study sample (n = 200).

Exploratory and Confirmatory Factor Analyses (EFA):

EFA was conducted to explore the factor structure, followed by Confirmatory Factor Analysis (CFA) to confirm construct validity. A five-factor solution emerged, consistent with theoretical expectations.

Reliability Testing:

Cronbach's alpha coefficients for each subscale ranged from 0.78 to 0.91, indicating strong internal consistency.

Full scale is available in Appendix 1.

Data Processing and Analysis

Data collected from two hundred participants were subjected to statistical analysis using IBM SPSS version 24.0. Cronbach's alpha (α) coefficient was calculated to evaluate the internal consistency of the scale. The validity of the scale was examined with exploratory factor analysis (EFA) and confirmatory factor analysis (CFA).

Kolmogorov-Smirnov and Shapiro-Wilk tests were used to evaluate whether the normality assumption was met, and analysis groups were created according to these criteria (Tabachnick & Fidell, 2019). An independent sample t-test was applied for variables with two subgroups, while a one-way analysis of variance (ANOVA) was performed for variables with more than two groups (Hair et al., 2019). Cohen's d and eta-squared coefficients were calculated to determine the effect size of significant differences (Fritz et al., 2013).

EFA was used to determine the sub-dimensions that constitute the safety culture, and then the validity of the model was tested with CFA. Pearson correlation analysis was applied to examine the relationships between the variables, and the relationships between the factors were evaluated.

RESULTS

The frequency (f) and percentages (%) of the personal characteristics of the participants are given in Table 1.

Table 1 Frequency and Percentages of Descriptive Characteristics of Employees

Variable	Group	f	%
Age	15-20	0	0.0
	21-25	5	2.5
	26-30	21	10.5
	31-35	30	15.0
	36-40	28	14.0
	41-45	26	13.0
	46-50	28	14.0
	51-55	31	15.5
	56-60	7	3.5
	Over 60	24	12.0
	Total	200	100
Gender	Female	157	78.5
	Male	43	21.5
	Total	200	100
Marital status	Married	139	69.5
	Single	42	21.0
	Divorced/Widowed	19	9.5
	Total	200	100
Educational level	Primary school	63	31.5
	High school	86	43.0
	Associate degree	8	4.0
	Bachelor's degree	32	16.0
	Postgraduate	6	3.0
	None	5	2.5
	Total	200	100

Note. Percentages may not total exactly 100 due to rounding.

As shown in Table 1, the demographic characteristics of the participants are as follows: females constitute 78.5% of the sample, while males account for 21.5%. Age distribution is categorized into distinct ranges, with the highest proportions observed in the 31–35 years group (15%) and the 51–55 years group (15.5%). No participants fall within the 15–20 years age group.

Marital status data indicate that the majority of participants (69.5%) are married, followed by single individuals (21%) and those who are divorced or widowed (9.5%). Educational backgrounds vary, with high school graduates forming the largest group at 43%, followed by primary school graduates at 31.5%. In terms of higher education, 16% hold a bachelor's degree, 4% have an associate degree, and 3% possess a postgraduate degree. Additionally, 2.5% of participants reported having no formal education. The gender distribution shows that 78.5% of participants are female, while 21.5% are male. Statistical data of SCAS are presented in Table 2.

Table 2 The Safety Culture Assessment Scale Statistical Data

Data	α	Item	KMO	Sig.
Results	0.871	57	0.785	0.000

Note. KMO > 0.70 indicates sampling adequacy; $p < .001$ for Bartlett's Test confirms the factorability of the correlation matrix

According to Table 2, the reliability coefficient (Cronbach's alpha) of the scale was calculated as $\alpha = 0.871$. The Kaiser-Meyer-Olkin (KMO) value was 0.785. The significance level of Bartlett's test was 0.000 ($p < 0.05$). The statistical values related to the SCAS factors are presented in Table 3.

Table 3 Statistics of Safety Culture Assessment Scale factors

Code	Number of Items	α	Eigenvalue	Variance (%)
F-1	13	0.760	10.442	36.319
F-2	12	0.745	2.732	8.794
F-3	15	0.755	1.966	6.450
F-4	6	0.766	1.824	6.200
F-5	11	0.792	1.791	6.143

Note. α = Cronbach's alpha; values indicate internal consistency of each factor.

The outcomes of the factor analysis applied to the survey items are presented in Table 3. Five distinct factors (F-1 to F-5) were identified.

Factor 1, "Management Commitment," includes 13 items ($\alpha = 0.760$) with an eigenvalue of 10.442, accounting for 36.319% of the total variance.

Factor 2, "OHS Training and Communication," consists of 12 items ($\alpha = 0.745$), with an eigenvalue of 2.732, explaining 8.794% of the total variance.

Factor 3, "Employee Participation and Awareness," includes 15 items ($\alpha = 0.755$), with an eigenvalue of 1.966 and variance contribution of 6.450%.

Factor 4, "Fatalism," contains 6 items ($\alpha = 0.766$), eigenvalue = 1.824, variance = 6.200%.

Factor 5, "OHS Reporting," includes 11 items ($\alpha = 0.792$), eigenvalue = 1.791, variance = 6.143%.

The five-factor structure explains a total of 63.91% of the variance (Fritz et al., 2013). The results of the independent samples t-test conducted between Factor 2 (OHS Training and Communication) and gender are shown in Table 4.

Table 4 Independent Samples t-Test Results Between F-2 Factor and Gender Variable

Gender	M ($\bar{X}$)	SD	SE	t	p	d
Female	3.09	0.55	0.04	4.37	0.00*	0.86
Male	3.77	0.97	0.14			

Note. M = Mean; SD = Standard deviation; SE = Standard error of the mean; d = Cohen's d effect size.

*Significant at the $p < .05$ level.

Table 4 displays the outcomes of a t-test carried out to contrast the mean scores of an F-2 factor variable between two groups, classified by gender (female and male). The analysis outcomes reveal a statistically significant difference in the OHS Training and Communication factor mean scores between male and female participants ($t = 4.371$, $p < 0.05$). Based on the effect size coefficient (0.86), the gender variable demonstrates a substantial impact on the OHS Training and Communication factor, with a large effect size. The mean score for male participants in the OHS Training and Communication (F-2) factor was higher than that of female participants. The results of the ANOVA conducted between the Employee Participation and Awareness factor, coded as F-3, and the educational level variable are presented in Table 5.

Table 5 ANOVA Results Between The F-3 Factor and The Educational Level Variable

Education Level	M ($\bar{X}$)	SD	F	p	η^2	Difference
1	3.06	0.37	27.48	0.00*	0.41	3,4,5>1,2
2	3.08	0.35				
3	3.97	0.55				
4	4.06	0.92				
5	4.10	0.46				
6	3.98	0.54				

Note. 1=Primary Education, 2=High school, 3=associate degree, 4=Bachelor's Degree, 5=Postgraduate, 6=None, η^2 =Eta-squared (effect size) Significant differences were found at $p < .05$.

Post hoc comparison shows that groups 3 (associate), 4 (bachelor's), and 5 (postgraduate) scored significantly higher than groups 1 (primary) and 2 (high school).

Derived from the data outlined in Table 5, a noteworthy distinction emerges among the groups regarding the Employee Participation and Awareness factor and the educational level variable [$F(5, 194) = 27.487, p < 0.05$]. Post hoc multiple comparison tests disclose significant differences between groups with associate, bachelor's, and postgraduate degrees compared to those with primary and high school education. The effect size for the educational level variable is substantial. The results of ANOVA conducted between the Fatalism factor (coded as F-4) and the professional experience variable are presented in Table 6.

Table 6 One-Way ANOVA Results for Factor 4 Scores by Professional Experience

Experience Group	$\bar{X}$	SD	F	p	η^2	Difference
1 (≤ 1 year)	1.47	0.62	8.13	0.00*	0.17	5 > 1,2,3
2 (2–4 years)	2.08	0.52				
3 (5–9 years)	2.17	0.99				
4 (10–14 years)	2.76	0.84				
5 (15–19 years)	2.88	0.70				
6 (≥ 20 years)	2.56	0.73				

Note. $p < .05$ is considered statistically significant. **Difference** comparisons (Tukey HSD) indicate that Group 5 scored significantly higher than Groups 1, 2, and 3.

According to the outcomes outlined in Table 6, a statistically significant difference was observed among the groups concerning the Fatalism factor and the variable of professional experience [$F(5, 194) = 8.133, p < 0.05$]. The multiple comparison tests indicated that the 15–19 year group significantly differed from the 1 year and below, 2–4 year, and 5–9 year groups. The effect size analysis showed that the total working time variable had a substantial impact on the Fatalism factor. The results of the Pearson Correlation analysis among the SCAS factors are presented in Table 7.

Table 7 Correlation Analysis Results Between Safety Culture Assessment Scale Factors ($n = 200$)

Factor		F1	F-2	F-3	F-4	F-5
F-1	r	1	0.704	0.635	- 0.335	0.581
	p	-	0.000**	0.000**	0.000**	0.000**
F-2	r		1	0.718	- 0.426	0.643
	p		-	0.000**	0.000**	0.000**
F-3	r			1	- 0.567	0.628
	p			-	0.000**	0.000**
F-4	r				1	- 0.465
	p				-	0.000**
F-5	r					1
	p					-

Note. **F-1** Management Commitment, **F-2** OHS Training and Communication, **F-3** Employee Participation and Awareness, **F-4** Fatalism, **F-5** OHS Reporting, r = Pearson Correlation coefficient (2-tailed), $**=p<0.01$ indicates statistically significant correlation.

According to Table 7, a strong positive correlation was observed between OHS training and communication (F-2) and management commitment (F-1) ($r = 0.704, p < 0.01$). Similarly, a significant positive correlation was found between employee participation and awareness (F-3) and OHS reporting (F-5) ($r = 0.628, p < 0.01$).

Conversely, the fatalism factor (F-4) demonstrated a moderate to strong negative correlation with all other SCAS dimensions, ranging from $r = -0.335$ to $r = -0.567$ ($p < 0.01$).

Overall, statistically significant positive correlations were observed among management commitment (F-1), training and communication (F-2), and employee participation and awareness (F-3) ($p < 0.01$), indicating a strong interrelationship among these factors.

CONCLUSION and DISCUSSION

The findings of this study support and extend previous research (Neal et al., 2000; Reason, 1997) by reaffirming that training, communication, and managerial commitment form the foundation for establishing a proactive safety culture. The significant positive correlation ($r = 0.704$, $p < 0.01$) between managerial commitment (F-1) and OSH training and communication (F-2) aligns with Neal et al.'s (2000) framework linking safety climate and individual behavior through organizational practices. Similarly, Reason (1997) emphasized that organizational failures often arise through inadequate training and communication; both are directly addressed in this study.

The correlations between F-1 (Managerial Commitment), F-2 (Training), and F-3 (Participation) provide empirical support for Zohar's (1980) conceptualization of safety climate as a shared perception of managerial commitment. The negative relationship between fatalism (F-4) and the other dimensions supports the findings of Wang et al. (2023), which indicate that disengagement from safety practices increases in environments with inadequate leadership support.

Education level and work experience emerged as significant predictors of participation and reporting behaviors. Respondents with higher education levels reported significantly greater engagement in safety-related participation and awareness (F-3), consistent with Cooper's (2000) model, which conceptualizes safety culture as a result of behavioral, situational, and cognitive factors. Post-analysis revealed statistically significant differences between participants with higher and lower education levels ($p < 0.05$, $\eta^2 = 0.41$). Similarly, those with less than one year of experience reported higher participation in F-2, F-3, and F-5, indicating increased motivation and risk awareness during the orientation phase (Yıldız and Yılmaz, 2017).

The strong positive correlation ($r = 0.718$, $p < 0.01$) between F-2 (OHS Training and Communication) and F-3 (Participation and Awareness) highlights the dual function of training: a tool for disseminating information and a strategic tool for promoting a participatory safety culture (Cooper, 2000). Gender differences were also observed. Male employees reported higher scores on the training and participation factors, while female employees scored higher on fatalism. This is consistent with Demirbilek and Çakır (2008) and Han et al. (2019), who suggest that gender inequalities in training access and operational roles can influence perceptions and behaviors. These differences highlight the need for gender-sensitive safety interventions, particularly in male-dominated industries like construction.

Furthermore, participants with 15-19 years of experience exhibited higher fatalism, while those with over 20 years of experience demonstrated greater alignment with management commitment. These patterns may reflect how prolonged exposure to organizational norms influences safety attitudes, increasing trust in management processes or normalizing risk over time (Durgut, 2019).

Correlation analyses revealed strong positive correlations between F-1, F-2, F-3, and F-5 ($r = 0.581$ to 0.718 , all $p < 0.001$), suggesting that improvements in training and communication not only increase participation but also reinforce trust in management and willingness to report hazards. Conversely, F-4 (Fatalism) showed moderate negative correlations with all other dimensions ($r = -0.335$ to -0.567). This suggests that fatalistic beliefs hinder the adoption of proactive safety practices, consistent with Reason's (1997) corporate accident model.

This study contributes to the literature by examining the relationships among the five dimensions of the Safety Culture Assessment Scale (SCAS) in a sample of 200 white-collar workers across twenty construction projects in Izmir, Turkey. The scale demonstrated strong internal consistency (Cronbach's $\alpha = 0.871$), and its factor structure was confirmed by adequate sampling ($KMO = 0.785$) and significant Bartlett test results ($p < 0.001$), supporting its robustness (Costello and Osborne, 2005; Taber, 2017).

More importantly, this study identifies context-specific dynamics in the Turkish construction industry. Hierarchical and demographic differences (especially education, gender, and experience) indicate that safety culture development is not uniform. Therefore, industry-specific

safety programs should be tailored to address these differences. Employees with lower levels of education tend to align with corporate leadership, while those with higher levels contribute through increased procedural participation. These complementary roles confirm the need for integrated training strategies that empower all employee groups.

The findings are consistent with previous research conducted in diverse cultural settings (Lingard, 2002; Liao et al., 2017; Vinodkumar and Bhasi, 2010; Choi and Carlson, 2014; Acheampong et al., 2024) and highlight the importance of educational background in promoting safety participation. Structured and ongoing training aligned with cognitive, behavioral, and organizational dimensions is vital for building resilient safety cultures.

However, limitations remain. Psychosocial risk management has not been fully integrated into the current security assessment framework. Future research should explore sustainable, behavior-based training models that include mental health support and stress management to enhance long-term employee well-being and organizational resilience.

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Appendices

Appendix 1. Safety Culture Assessment Scale

Gender	Female		Male						
Marital Status	Married		Single		Divorced/Widowed				
Age	18-20 age		21-25 age		26-30 age				
	31-35 age		36-40 age		41-45 age				
	46-50 age		51-55 age		56-60 age				
	Over 60 years								
Educational Level	Primary School		High School		Associate's Degree				
	Bachelor's Degree		Postgraduate		None				
Professional Experience	1 year and below		2-4 years		5-9 years				
	10-14 years		15-19 years		20 years and over				
5-point Likert scale: 1=Fully Disagree, 2=Disagree, 3=Neither Agree nor Disagree, 4=Agree, 5=Fully Agree									
Statements					1	2	3	4	5
1. Management promptly takes action to address management and occupational safety issues in my workplace.									
2. When an occupational safety concern arises, management acts resolutely.									
3. Whenever management discusses unsafe practices, corrective measures are always taken.									
4. Managers in my workplace show interest in my safety.									
5. We are constantly reminded by management and section supervisors to comply with the instructions on safety warning signs.									
6. If occupational safety procedures are not fully established in my workplace/department, managers and auditors express their concerns.									
7. It ensures the immediate elimination of any element that may pose a risk of occupational accidents, even if it is costly.									
8. A significant amount of time and money is allocated for the education of employees on occupational health and safety.									
9. Employees can share their workplace health and safety concerns with management.									
10. The workplace physician and occupational safety specialist are granted the necessary authority to perform their duties and inspections.									
11. Management clearly considers the importance of employee occupational safety.									
12. The operation of occupational safety procedures is carefully monitored.									
13. Management believes that occupational safety is as important as production.									
14. There is good communication among groups in this workplace.									
15. The scope of objectives and goals is clearly defined in this workplace.									
16. Employees can negotiate with top management on occupational safety issues.									
17. There is open communication about occupational safety issues in this workplace.									
18. Occupational safety topics are given high priority in workplace training programs.									
19. Workplace health and safety training covers many situations encountered by employees in their jobs.									
20. Employees receive detailed training on workplace health and safety.									
21. Employees have sufficient access to workplace health and safety programs.									
22. I believe that the cause of workplace accidents in this workplace is lack of training.									
23. Regular informative meetings on workplace health and safety are held by experts in this workplace.									
24. Those providing training have the necessary knowledge and experience in occupational health and safety.									
25. I believe that workplace health and safety training increases awareness of occupational safety.									
26. Employees participate in the preparation of regulations for procedures and usage instructions.									
27. Employees actively participate in the preparation, implementation, improvement, and monitoring of workplace health and safety plans, committees, and teams.									

28. Employees comply with safety regulations.					
29. Employees make written suggestions for deficiencies in working conditions and occupational safety issues.					
30. I use/implement the correct occupational safety procedures in my work.					
31. I ensure high levels of occupational safety while performing my job.					
32. I voluntarily carry out supportive tasks and activities to improve workplace safety.					
33. I am aware of my responsibilities for workplace safety.					
34. I know the necessary workplace safety rules for my job.					
35. I always comply with occupational safety rules.					
36. I am aware of the risks related to my field.					
37. I know which risks personal protective equipment is used against.					
38. I am aware of the costs and damages to workers, employers, and the state caused by occupational accidents and occupational diseases.					
39. I keep track of regulations, legislation, and other publications (books, articles, etc.) related to occupational health and safety in my field.					
40. Personally, occupational safety issues are not the most important aspect of my job.					
41. Accidents are inevitable.					
42. It is not possible to prevent accidents.					
43. The use of machines and technical equipment makes accidents inevitable.					
44. What will happen to you is largely a matter of luck while working.					
45. I have been doing this job for years, nothing will happen to me.					
46. Despite the company's efforts, preventing accidents seems inevitable.					
47. We always report accidents and hazardous incidents in the workplace.					
48. I am encouraged to report near-miss incidents.					
49. Incident/accident reports are used to improve occupational safety.					
50. Lessons are learned from near-miss and accident reports in our company.					
51. I am encouraged to report unsafe conditions in the workplace.					
52. Our workplace supervisors create monthly safety cards for us, evaluate them in meetings, and share them with us.					
53. They consult with us to develop health and safety measures.					
54. They teach us how to detect problems before health and safety measures are needed.					
55. Besides making requests, they explain to us why we need to work in a healthy and safe manner.					
56. I believe that even under pressure, we should follow the occupational safety rules.					
57. Although it may be uncomfortable, I believe that personal protective equipment should be used during work.					

Son Çocukluk Döneminde Çocuğu Olan Babaların Güncel Babalık Rollerine İlişkin Algıları

The Perceptions of Fathers with Children in Late Childhood Regarding Current Fatherhood Roles

Ufuk Koçyiğit¹Esat Şanlı²

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Öz

Bu araştırma, son çocukluk döneminde (6-12 yaş) çocuğu olan babaların babalık algılarını, deneyimlerini ve değişen babalık rollerini incelemeyi amaçlamaktadır. Babalık, bireyin yaşamında önemli bir yer tutan ve kültürel, sosyal ve ekonomik dinamiklerden etkilenen bir olgudur. Toplumsal değişimler ve bireysel deneyimler, babalık algısında ve ebeveynlik pratiklerinde dönüşümlere yol açmaktadır. Bu bağlamda, araştırmada babalarla nitel yöntem kullanılarak görüşmeler gerçekleştirilmiştir. Veri toplama sürecinde, yarı yapılandırılmış 21 sorudan oluşan bir görüşme formu kullanılmış ve elde edilen veriler olgubilim (fenomenoloji) deseni çerçevesinde tematik analiz yöntemiyle incelenmiştir. Analiz sonucunda, babaların babalık algılarını, ebeveynlik tarzlarını ve toplumsal babalık normlarıyla uyumlarını ele alan 12 tema belirlenmiş, bu temalar frekans dağılımları ile desteklenerek sunulmuştur. Araştırma bulguları, babaların kendi babalarıyla olan ilişkileri, diğer babalarla etkileşimleri ve helikopter ebeveynlik kavramına yaklaşımları gibi konulara ışık tutmaktadır. Sonuç bölümünde, elde edilen veriler babalık rolleri arasındaki farklılıklar ve tutarsızlıklar bağlamında değerlendirilmiş, günümüz babalık anlayışına ilişkin çıkarımlar yapılmıştır. Araştırma, babalığın dinamik bir kavram olduğunu ve bireysel ile toplumsal düzeyde değişime açık olduğunu ortaya koymaktadır.

Anahtar Kelimeler: Babalık, babalık algısı, babalık davranışları, babalık deneyimleri

Abstract

This study aims to examine the perceptions, experiences, and evolving roles of fathers with children in late childhood (ages 6-12). Fatherhood is a significant aspect of an individual's life, influenced by cultural, social, and economic dynamics. Societal changes and personal experiences contribute to shifts in fatherhood perceptions and parenting practices. In this context, interviews were conducted with fathers using qualitative research methods. Data were collected through a semi-structured interview form consisting of 21 questions and analyzed using thematic analysis within the framework of phenomenological research design. As a result of the analysis, 12 themes were identified, addressing fathers' perceptions of fatherhood, parenting styles, and their alignment with societal norms of fatherhood. These themes were supported with frequency distributions. The findings shed light on various aspects, such as fathers' relationships with their own fathers, interactions with other fathers, and their perspectives on helicopter parenting. In the conclusion section, the findings were evaluated in terms of inconsistencies and variations in fatherhood roles, and insights into contemporary fatherhood were discussed. The study highlights that fatherhood is a dynamic concept subject to individual and societal transformations.

Keywords: Fatherhood, perception of fatherhood, fatherly behaviors, fatherhood experience

¹Yüksek Lisans Öğrencisi, Ondokuz Mayıs Üniversitesi, Eğitim Fakültesi, Rehberlik ve Psikolojik Danışmanlık A.B.D., Samsun, Türkiye, kocyiigit.ufuk.55@gmail.com, orcid.org /0009-0008-2724-0334

²Doç. Dr. Ondokuz Mayıs Üniversitesi, Eğitim Fakültesi, Rehberlik ve Psikolojik Danışmanlık A.B.D., Samsun, Türkiye, esat.sanli@omu.edu.tr, orcid.org /0000-0001-8227-8097

GİRİŞ

Toplum, çeşitli yapıların bir araya gelmesiyle oluşan dinamik bir sistemdir ve bu sistemin en önemli birimlerinden biri de ailedir. Aile, toplumsal yapının oluşumunda temel bir rol oynayan, belirli fonksiyonlara sahip ve hem üst hem de alt kurumlarca biçimlenen, aynı zamanda bu yapılar üzerinde etkiye sebep olan bir kurum olarak tanımlanmaktadır (Karataş, 2001). Aile, bireyin gelişiminde önemli bir yere sahip olup, özellikle çocuk için yaşamsal bir ortam sunar. Genel anlamda anne, baba ve çocuklardan oluşan bu yapı, bireyin barınma, beslenme, eğitim ve toplumsal etkileşim gibi temel ihtiyaçlarını karşılamaktadır.

Aile içindeki ebeveynler, çocuklarının gelişimi açısından önemli sorumluluklar üstlenmektedir. Anne, özellikle doğumdan okul çağına kadar olan dönemde çocuğun beslenmesi, temel öğrenimleri, sevgi ve şefkat görmesi gibi konularda ön plandadır. Baba ise koruyucu bir birey görülmektedir. Türk Dil Kurumuna göre baba kelimesi, "koruyucu, babalık duyguları ile dolu kimse" anlamına da gelmektedir (TDK, 2024).

Ebeveyn-çocuk ilişkisi; çocuğun psikolojik, sosyal ve bilişsel gelişiminde belirleyici bir etkiye sahiptir. Aile tutumunun çocuğun liderlik becerilerine olumlu katkı sağladığını ortaya koyan araştırmalar bulunmaktadır (Saçan, 2023). Benzer şekilde, ebeveynin çocuğunun medya kullanımına müdahil olması ile çocuğun problemli medya kullanımı arasında anlamlı bir ilişki olduğu tespit edilmiştir (Arlı, 2022). Dolayısıyla, ebeveynlerin çocuk gelişimi konusundaki bilgi düzeyi, çocukların sağlıklı bireyler olarak yetişmelerinde kritik bir rol oynamaktadır (Işık ve İşlek, 2017).

Toplumsal değişimler aile yapısını da etkilemiştir. Bu bağlamda çekirdek aile ve geniş aile kavramları öne çıkmaktadır. Çekirdek aile, anne, baba ve çocuktan oluşurken, geniş aile birden fazla nesli içeren daha büyük bir yapıya sahiptir (Gürsoy ve Coşkun, 2006). Geniş ailede birden fazla baba-çocuk ilişkisi ve dede-torun ilişkisi bulunurken, çekirdek ailede bireysel ilişkiler daha ön plandadır.

Babalar, sağlıklı bir aile yapısının oluşmasında, çocukların gelişiminde ve toplumsal yapının şekillenmesinde önemli bir rol oynamaktadır. Babaların çocuk gelişimine katılımı ile çocukların öz düzenleme becerilerinde artış görüldüğü belirtilmektedir (Cingöz, 2024). Ayrıca, baba katılımının, çocukların sosyal yetkinlik düzeyi ve davranış sorunları üzerinde belirleyici olduğu gösterilmiştir (Semiz, 2022). Ergenlik döneminde ise babalık algısının, zorbalık eğilimleri üzerinde etkiye sebep olduğu ve babalık rol algısının yükselmesiyle ergenlerin zorbalıkta bulunma veya mağdur olma ihtimallerinin azaldığı saptanmıştır (Kafalı, 2021).

Psikolojide algı kavramı, "bir şeye dikkati yönelterek o şeyin bilincine varma, idrak" olarak tanımlanmaktadır (TDK, 2024). Bu bağlamda, babalık algısı, bireyin babalık rolü ve sorumluluklarına dair bilinçli farkındalığını ifade etmektedir. Geçmişte babaların daha otoriter olduğu ve çocuk bakımına daha az vakit ayırdığı görülse de günümüzde babaların çocuklarıyla daha fazla vakit geçirdiği belirtilmektedir (Kakaliçoğlu, 2019). Nesiller arasındaki farklılıklar da bu algının değişiminde etkiye sebep olmaktadır. Örneğin, 40 yaş altı babalar, kendilerinden önceki nesillere kıyasla daha paylaşımcı bir babalık anlayışına sahiptir (Sümer, 2017). Benzer şekilde, babalık algısının sosyoekonomik düzey, çocuk sayısı ve baba olma yaşı gibi faktörlerden etkilendiği belirtilmektedir (Şahin, 2023).

Toplumsal süreçlerin yanı sıra medya da babalık algısının şekillenmesinde etkiye yol açmaktadır. On bir reklam filmi ve izleyici yorumlarını analiz eden bir çalışmada, reklamlarda babaların aileye düşkün, bakımlı ve ev içi işlerde ortaklık içinde olan "yeni baba" biçimiyle temsil edildiği belirlenmiştir (Türk, 2022). Bu durum, babalık algısının toplumsal değişimlere paralel olarak değiştiğini göstermektedir.

Babalık, yalnızca aile içinde değil, toplum genelinde de önemli bir role sahiptir. Yapılan araştırmalar; babalık algısının ve rollerinin çocuk gelişimi, aile içi ilişkiler ve toplumsal yapı üzerinde belirleyici bir etkiye sebep olduğunu ortaya koymaktadır. Babaların çocuklarıyla daha fazla zaman geçirmesi, onların gelişim sürecine olumlu katkıda bulunmakta ve sağlıklı bireyler

yetişmesine olanak tanımaktadır (Uğur, 2020). Annelerin bakış açısına göre, babalık rolü en çok "koruyan ve sahiplenen" olarak tanımlanırken, "anne rolünü tamamlayan" ve "ilgi ve sevgi gösteren" baba modeli öne çıkmaktadır (Özdeniz, 2020).

Sonuç olarak, babalık algısı ve rolleri zaman içinde değişmekte ve farklı toplumsal, ekonomik ve kültürel faktörlerden etkilenmektedir. Günümüzde babaların çocuk gelişimine daha fazla katkı sağlamaları beklenmektedir. Bu dönüşüm hem aile yapısının güçlenmesine hem de bireylerin psikososyal gelişimine katkı sunabilmektedir.

Son yıllarda babalık rolü, toplumsal dinamikler ve bireysel deneyimlerin etkisiyle önemli değişimler geçirmiştir. Geleneksel baba modelinden daha aktif ve katılımcı bir babalık anlayışına geçiş yapılmakta, bu durum babaların ebeveynlik tarzlarını, çocuklarıyla olan ilişkilerini ve toplumsal beklentilere uyumlarının etkilenmesine sebep olmaktadır. Bu araştırma, 6-12 yaş aralığında çocuğu olan babaların babalık algılarını, davranışlarını ve değişen babalık durumlarını incelemektedir. Bu doğrultuda, günümüzde babaların babalık algılarını nasıl yorumladıkları, bu algılarla ne derece tutarlı davrandıkları ve babalık rollerini hususunda en çok hangi faktörlerin etkiye sebep olduğu sorgulanmaktadır. Ayrıca, babaların ebeveynlik tarzları, kendi babalarıyla olan ilişkilerinin kendi babalık deneyimleri üzerinde sebep olduğu etki ve diğer babalarla iletişimin babalık deneyimlerini nasıl şekillendirdiği de araştırmanın odak noktaları arasındadır. Bunun yanı sıra, helikopter ebeveynlik kavramına yaklaşımları, toplumda babalıkla ilgili hangi konuların daha fazla konuşulmasını istedikleri ve baba adaylarına iletmek istedikleri mesajlar da çalışmanın önemli bileşenleri arasında yer almaktadır. Böylece, günümüz babalarının deneyimleri derinlemesine incelenerek, babalık olgusunun değişen yapısına dair çerçeve sunulması istenmektedir.

Araştırmanın Amacı

Bu araştırma, son çocukluk döneminde [6-12 yaş] çocuğu olan babaların güncel babalık algılarını, deneyimlerini ve değişen babalık rollerini incelemektedir.

YÖNTEM

Bu bölüm çalışma grubu, araştırmanın modeli, uygulanan veri toplama aracı, verilerin toplanması mevzularıyla ilgili bilgiler içermektedir.

Araştırma Modeli

Bu çalışmada nitel araştırma desenlerinden olgubilim (fenomenoloji) yaklaşımı kullanılmıştır. Olgubilim, bireylerin belli bir olguyu nasıl deneyimlediğini anlamaya odaklanan bir araştırma desendir (Creswell, 2013). Bu çalışmada özellikle Van Manen'in hermeneutik fenomenoloji yaklaşımı temel alınmıştır. Van Manen (1990), yaşantıların anlamını bireylerin anlatıları aracılığıyla yorumlamaya odaklanır.

Bu bağlamda, araştırmada yer alan babaların güncel babalık rolleri hakkındaki yaşantı ve algıları, onların kendi ifadeleriyle ortaya konmuş ve bu deneyimlerin öznel anlamlarına ulaşılmaya çalışılmıştır. Bu nedenle olgubilim deseni, çalışmanın amacıyla örtüşmekte ve yöntembilimsel açıdan anlamlı bir tercih olarak belirlenmiştir.

Çalışma Grubu

Araştırmanın çalışma grubu, son çocukluk döneminde çocuğu olan 8 tane babadır. Araştırma 11 Aralık 2024 – 29 Mart 2025 arasında gerçekleşmiştir. Çalışma grubunda son çocukluk döneminde çocuğu olan babaların seçilmesiyle geçmiş ve yeni dönem babalık algıları hususunda literatürdeki verilerle birlikte ele almak mümkün olabilmektedir ve güncel dönemdeki babaların algılarını yansıtmaları açısından da bu duruma katkı sağlayabilir. Çalışmada yer alan katılımcıların yaşları 38-45 arasında değişmektedir.

Verilerin Toplanması ve Analizi

Çalışmada babaların babalık algıları, günümüzdeki babalık yaklaşımları, babalık davranış ve deneyimleri ele alındığından 21 soruluk yarı yapılandırılmış görüşme aracı kullanılmıştır. 21 sorunun 4 tanesi kişisel bilgi, 1 tanesi ek olarak ifade edilmek istenen görüş olup olmadığı şeklindedir. Bahsedilen veri toplama aracı ek kısmında bulunmaktadır. Kalanlar babalık ve ebeveynlik ile ilgilidir. Katılımcının babalıkla ilgili algısı, babalık davranışları, babalık hususunda önceki ve güncel yaklaşımlar konusundaki düşünceleri, ebeveynlik tarzı, helikopter ebeveyn kavramına nasıl yaklaştığı ve babalık deneyimleri bilgileri toplanmıştır.

Katılımcıların cevaplarından elde edilen veriler incelenip katılımcıların yaklaşımları yorumlanmaktadır. Verilerin analizi, Braun ve Clarke'ın (2006) tematik analiz yaklaşımı temel alınarak gerçekleştirilmiştir. Kodlama süreci manuel (el ile) olarak yürütülmüş, nitel veri analiz programı kullanılmamıştır.

Kodlama işlemi, birinci yazar tarafından ve analiz süreci boyunca ikinci yazar danışmanlık sağlamıştır. Görüşme verileri dikkatlice ele alınmış, anlamlı ifadeler kodlanmış ve daha sonra bu kodlar temalar altında yer almıştır. İkinci yazar süreçte danışmanlık ve kontrol mekanizmasıyla tutarlılığın sağlanmasına katkıda bulunmuştur. Verilerin geçerliği ve zenginliği katılımcıların ifadeleri metin içinde alıntılarla desteklenmiş ve yorumlar bağlamdan kopmadan aktarılmıştır. Katılımcıların benzer ifadeleri tekrarlamaya başlaması veri doygunluğuna ulaşıldığını gösteren bir işaret olarak değerlendirilmiştir. Katılımcıların çeşitli yaş gruplarından ve farklı sosyo-kültürel geçmişlerden seçilmesi, elde edilen kodların farklı bakış açılarını yansıtmalarını sağlamış ve çalışmanın içsel geçerliliğini artırmıştır. Çalışmanın sınırlı katılımcı sayısına rağmen elde edilen verilerin derinliği ve anlam bütünlüğü korunarak geçerlik ve güvenilirlik güvence altına alınmaya çalışılmıştır.

BULGULAR

Bu kısımda araştırmadan elde edilen veriler kullanılarak bulgular ele alınmaktadır. Temelde babalık algıları, babalık deneyimleri ve zaman içerisinde değişen babalık durumlarını içermektedir. Alt problemlere ayrılmış olan sorulara cevaplar aranmaktadır. Görüşmelerden elde edilen ifadelerin bir kısmı örneklendirilmiştir. Toplanan veriler temalara ve kodlara ayrılmıştır. 11 adet tema yer almaktadır. Katılımcıların ifadeleri bahsi geçen tema ve kodlara dahil edilmiş ve tablolaştırılmıştır. Katılımcılar K1-K2-K3-K4-K5-K6-K7-K8 şeklinde ayrılmıştır. Kodlara dahil edilen katılımcı sayısı frekans bölümünde ifade edilmiştir.

Son Çocukluk Döneminde Çocuğu Olan Babaların Babalık Algıları, Davranışları ve Günümüzdeki Babalık Algısı Yorumları

Babalara babalığı nasıl algıladıkları sorulmuştur. Bu kapsamda destek olma, sevgi gösterme, arkadaşlık, sorumluluk alma, serbest bırakma ve yaşama hazırlama şeklinde 6 tane kod belirlenmiştir. Bu kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 1. Babalık Algısı

Tema	Kodlar	Katılımcılar	Frekans
	Destek olma	K1, K2, K3, K6	4
	Sevgi gösterme	K2, K3, K4, K6, K8	5
	Arkadaşlık	K1, K3, K7, K8	4
Babalık Algısı	Sorumluluk Alma	K1, K2, K6	3
	Serbest bırakma	K1, K2, K3, K4, K5, K7	6
	Yaşama Hazırlama	K1, K2, K6, K7, K8	5

Tablo 1'e bakıldığında katılımcıların babalığı kendi açısından veya günümüzdeki babalık açısından algılama biçimlerine göre incelendiğinde çocukları serbest bırakma(f=6), yaşama hazırlama(f=5) ve sevgi gösterme(f=5) konularında yüksek oran elde edildiği görülmektedir. Katılımcıların çoğu çocuklara destek olmak ve onlara sevgi göstermekle paralel ifadelerde bulunmuştur. K5 ise günümüzdeki babaların sevgiden biraz yoksun ve kendilerini düşünmekten çocuklarına zaman ayıramadıkları yönünde ifade bulunmuştur. Yine de genel ifadeler göz önüne alındığında K5 serbest bırakma koduna dahil edilmiştir. Sevgi gösterme yönündeki algı, katılımcıların genel beyanlarıyla uyumludur. Katılımcılar, babalık duygusundan hoşlanmakta ve babalığı önemli görmektedir.

Aile çok önemli bir kavram ve bence baba bunun temel taşı. Baba ne kadar iyi davranırsa çocuklarına onlara ne kadar iyi arkadaş olabilirse onların duygularına hislerine ne kadar değer verebilirse ilerde de o çocuklar kendi çocuklarına bunu yansıtırlar bu yüzden bence hareketlerimize ve daha dikkatli davranmalıyız. (K1). Katılımcının bu ifadeleri öznel babalık algısını genel biçimde ifade etmekle konuyu derinleştirmesi bakımından da katkı sağlamaktadır.

Onların hayatta başarılı olması için çabalarım. Bence baba olmak güzel (K2)

Babalar daha çok ihtiyaçları gören onlara sevgiyi veren hep aranacak ikinci kişi (K3). Katılımcının açık beyanı olmasa da aranan ikinci kişi demesiyle birinci kişinin anneler olduğunu düşündürmektedir. Bu yönüyle temaya farklı bir perspektif katmaktadır.

Günümüzde babalar şu an bildiğim kadarıyla daha da özgürlükçü. Ben öğretmen olduğum için ve babamdan dolayı özgürlükçü bir baba yapıyordum (K4)

Sevgiden biraz yoksunlar. Kendilerini çok düşündükleri için çocuklarını fazla düşünmüyorlar diyeyim (K5). Katılımcı diğer katılımcıların aksine babaları sevgiden yoksun sayarak eleştirmektedir. Bu yönüyle temaya farklı bir bakış açısı sunmaktadır.

Bana kalırsa ne olursa olsun her durumda en önemli unsur sevgi. Sevgiyi hissedebilen çocukların daha sağlıklı yetiştiğini düşünüyorum (K6)

Babaların Çocuklarına Karşı Yaklaşımları ve İletişim Biçimleri

Katılımcılara çocuklarıyla yaşantılarını ifade etmelerine yol açan soru sorularak çocuklarına karşı yaklaşımlarını içeren bilgiler edinilmiştir. Bu kapsamda çocukların fikrini alan, onlara hayır diyebilen, sorumluluk almaya teşvik eden, çocukların isteklerini yerine getirmeye çalışan ve çocuklarıyla olay yaşadıklarında onlara açıklamada bulunarak iletişim kurmayı tercih etmek olarak kodlara ayrılmıştır. Bu kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 2. Çocuklara Karşı Davranışlar

Tema	Kodlar	Katılımcılar	Frekans
Çocuklara Karşı Davranış	Çocukların Fikrini Almak	K1, K2, K3, K4, K6, K8	6
	Hayır Diyebilmek	K2, K3, K7	3
	Sorumluluk Almaya Teşvik Etmek	K1, K2, K3, K5, K6	5
	Çocukların İsteklerini Yerine Getirmek	K1, K2, K3, K7, K8	5
	Çeşitli Durumlar Yaşandığında Açıklamada Bulunmak	K1, K3, K8, K6	4

Tablo 2 incelendiğinde katılımcıların neredeyse tamamı (f=6) çocuklarını fikrini önemsemek veya sormak yönünde ifadelerde bulunmuşlardır. Çocuklarını isteklerini yerine getirme ve sorumluluk almaya teşvik etmek de çoğunluktadır (f=5). Ayrıca çocuklarla bir konuda farklı düşünüldüğünde, çocuklara hayır denilmek istendiğinde ve benzeri durumlarda çocuklara karşı açıklama yaparak onların bilgilendirilmesi konusunda ifadelerde bulunan babalar da söz konusudur (f=4). Davranışlar incelendiğinde babaların babalık algıları ile uyumlu olduğu görülmektedir. Buna ek olarak katılımcı 1'in serbest baba olduğunu belirtmesi ve çoğunlukla bu çerçevede ifadelerde bulunmasıyla birlikte çocuklar adına plan yapan onlar adına karar veren baba modelini eleştirirken bu kişilerin çocuklarının aile kurduğu zaman babalık rolü oturmadiğı ve çocuklara yaptırım uygulayamayacağından bahsetmiştir. Çocuklara yaptırım uygulama kısmı tamamen serbest olmaktansa kurallı serbestlik olduğu izlenimini vermektedir.

Hayır demeyi de bilmeliyiz yerine göre. Çocuğun her şeyin olmayacağını olamayacağını veya yeri zamanı geldiğinde olacağını onlara iyi bir şekilde anlatmamız gerekiyor. Direkt hayır veya evetten ziyade neden hayır neden evet. Her davranışın sebebini açıklamamız gerekir (K3). Katılımcı 3, çocuklarıyla iletişimde neden sonuç ilişkisine ve çocuklarının bilgilendirilmesine önem vermektedir. Çocuklarına yaklaşımının detaylandırılması bakımından temaya katkı sağlamaktadır.

En büyük evladımdan en küçüğüne kadar istediği seçtiği bir şey varsa onları almak için özen gösteririm (K2)

Sorumluluk almayı öğrenmeyi gerekiyor. Hayatta karşılaşacakları sorumluluklara şu andan hazırlanmaları önemli (K6)

Babaların Babalık Rolünde Etkilenmesine Sebep Olan Faktörler

Katılımcı babalara kendi babalık rollerini uygularken üzerlerinde en çok etkiye sebep olduklarını düşündükleri faktörler sorulmuştur. Elde edilen veriler 3 kod altında incelenmiştir. Bunlar ise kendi çocukları, çevresindeki yaşantılar ve babalar ve kendi babaları şeklindedir. Çevre kısmına diğer babaların davranışları, etrafında deneyimledikleri olaylar da dahildir. Bu kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 3. Babalık Rolünde Etkiye Sebep Olanlar

Tema	Kodlar	Katılımcılar	Frekans
Babalık Rolünde Etkilenmeye Sebep Olan Faktörler	Çocuklar	K2, K4, K6, K8	4
	Çevre	K1, K3, K4, K7, K8	5
	Kendi Babası	K1, K4, K5, K6, K8	5

Tablo 3'e bakıldığında çevre, diğer babaların davranışları ve kendi babalarının davranışları (f=5). Bununla birlikte kendi çocuklarının etkiye sebep olduğunu ifade eden babalar (f=4) konumunda yer almaktadır. Genel çerçevede bakıldığında sayıca yakın bir dağılım olduğu görülmektedir. K4 ve K8 her kodda yer almakta bu da onların etkiye sebep olan çok yönlü faktörlere açık olduğunu göstermektedir. Tablo 6'daki diğer babalarla olan deneyim temasında ele alındığı gibi başka babaların davranışlarının babalık rolünde etkiye sebep olduğu K1 açısından görülmektedir.

Benim için önemli olan kendi evlatlarım. Evlatlarımın bana davranışı ve benim onlara karşı davranışım benim için ön planda. Hiçbir babayı örnek almıyorum (K2).

Her çocuk bir olmuyor. Beş kardeşin beşi bir olmaz derler ya. Çocuğun mizacı da senin davranışını etkiliyor ister istemez (K8).

Mesela bir arkadaşım çocuğuna bağırırken orda çocuğun düştüğü durumu veya çocuğun o anki duygusal durumunu gördüğüm zaman bu da bana kendi çocuğuma bağırmanın ya da sert çıkmamam gerektiğini öğretiyor bu gibi sonuçları çıkarıyorum (K1)

Ne kadar olsa insan kendi babasından etkileniyor. Bazen kendi babamda eleştirdiğim şeyleri bile çocuğuma yaparken buluyorum kendimi. Bence insanın kendi babasıyla olan ilişkisi çocuğu ile olan ilişkisini çok etkiliyor (K6)

Katılımcı Babaların Babalık Algılarının Zaman İçerisindeki Değişimi

Katılımcı babaların babalık algılarının süreç içerisinde değişikliğe uğrayıp uğramadığı belirlenmeye çalışılmıştır ve bu kapsamda soru yöneltilmiştir. Değişiklik olan durumlar belirlenmiş ve elde edilen veriler 3 kod altında incelenmiştir. Bunlar ise daha tecrübeli, daha serbest ve daha otoriter şeklindedir. Bu kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 4: Katılımcının Babalığında Değişiklik

Tema	Kodlar	Katılımcılar	Frekans
Katılımcının Babalığında Değişiklik	Daha tecrübeli	K1, K2, K4, K6, K7	5
	Daha serbest	K5, K6, K8	3
	Daha otoriter	K3, K7	2

Tablo 4 incelendiğinde her bir katılımcının da zaman içerisinde kendi babalıklarında değişiklik olduğunu düşündüğü görülmektedir. Babaların çoğu daha tecrübeli olduğuna veya olgunlaştığına olduğuna dair ifadeler öne çıkmaktadır (f=5). Daha serbest olan (f=3) ve daha otoriter olan babalar da (f=2) vardır. Zaman içerisinde katılımcılar çocuklarıyla zaman

geçirmesiyle ve onlarla ortak yaşantıların sonucunda daha tecrübeli hale gelmişlerdir. Bu süreçte kendisine öz eleştiri geliştiren veya ders çıkartan katılımcılar da bulunmaktadır. Birbirine zıt yönlü değişimler görülmesinin sebebi değişik yaşantıların tecrübe edilmesi veya deneyimlerin farklı algılanması ile ilgili olabilir.

İnsan her işte olduğu gibi babalıkta da zamanla kendini geliştirebiliyor. Eksikliklerini görüyor kendine öz eleştiri yapıp bunları düzeltebiliyor. Kendimi bu konuda babalığımın ilk zamanlarına göre biraz daha olgun baba olarak görüyorum (K1)

İlk çocuğumda daha serbest. Her şeye izin veren bir baba. İkincisinde biraz daha hayır demeyi öğrendim (K3)

Eskiden daha serttim şimdi daha yumuşak. Eskiye göre (K5)

İlk zamanlar daha bi idealist yaklaşıyordum doğrusu. Zamanla çocuktan çok şey beklediğimi fark ettikçe daha esnek yaklaşımaya başladım (K6)

Katılımcıların bu ifadeleri kendilerini önce ve sonra diye ayırıp değişimlerini dile getirmeleriyle temaya katkı sağlamaktadır.

Toplumdaki Babalığın Değişimi

Katılımcı babalara toplumdaki babalarla ilgili soru yöneltilerek kendileri dışındaki babaların ve toplumun genel gidişatının ne yönde olduğu incelenmiştir. Babaların beyanları daha özenli babalık, daha serbest babalık, sevgisini belli eden babalık, değer kaybetmiş baba ve daha anlayışlı baba şeklinde 5 koda ayrılarak incelenmiştir. Bu kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 5: Toplumdaki Babalığın Değişimi

Tema	Kodlar	Katılımcılar	Frekans
	Daha Özenli	K2, K6, K8	3
	Daha Serbest	K3, K4, K6, K7	4
Toplumdaki Babalığın Değişimi	Sevgisini Belli Eden	K2, K6, K7	3
	Değer Kaybetmiş	K3, K5, K6, K8	4
	Daha Anlayışlı	K1, K6, K8	3

Tablo 5 incelendiğinde tam anlamıyla bir noktada fikir birliği olmadığı anlaşılmaktadır. Babalar kendi ifadelerinde de farklı değişiklikler belirtmişlerdir. Örneğin K6 her kodda yer almaktadır. K8 ise 3 farklı değişimi ifade etmiştir. Dolayısıyla değişimlere tek bir noktadan bakılmadığı anlaşılmaktadır. Kodlar incelendiğinde daha özenli (f=3), daha serbest (f=4), sevgisini belli eden (f=3), değer kaybetmiş (f=4) ve daha anlayışlı (f=3) şeklinde olduğu görülmektedir.

Şu an daha özgürlükçü çocukları biraz daha bağımsız olan bir baba. Eskiden mesela bizim babalarımızdan korkuyorduk ama şu anki dönem korkmuyor (K4)

Sanki eski babalar daha değerliydi (K3)

Günümüzde babalar evlatlarına biraz daha özenli ve düzgün davranıyor. Eski babalar sevgisini hiçbir zaman evlatlarına net olarak göstermedi. Bu yüzden de geçmişte baba adayları olan babalarımız onlar da eksik büyüdüler. Onlar da hayata 1-0 geride başlamış oldular. Baba sevgisi yaşamadan (K2)

Katılımcıların bu ifadeleri babalığın önceki yaşantılar ve günümüz arasındaki değişimini farklı perspektiflerden ele alması yönüyle temaya katkı sağlamaktadır.

Katılımcıların Diğer Babalarıyla Deneyimleri

Katılımcı babaların çevrelerindeki diğer babalarla olan iletişimleri ve deneyimleri incelenmiştir. Bu noktada söz konusu durum sadece iletişim değil diğer babaların gözlemlenmesini de içermektedir. Babaların beyanları 5 koda ayrılarak incelenmiştir. Bu kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 6: Diğer Babalarla İletişim

Tema	Kodlar	Katılımcılar	Frekans
	Örnek Alma	K1, K4, K3, K7	4
Diğer Babalarla İletişim Deneyimi	Ders çıkarma veya onları hatalı bulma	K1, K3, K5, K6	4
	Önemsememe	K2, K8	2

Tablo 6 incelendiğinde katılımcılar diğer babaların davranışlarına bakarak örnek aldığını(f=4), diğer babaların davranışlarına bakarak kendilerine bir sonuç çıkardıklarını veya belirli davranışları sergileyen babalardan daha farklı düşündüklerini(f=4) belirtmişlerdir. İki katılımcı ise diğer babalarla olan ilişkilerini önemsemediğini ifade etmiştir. Katılımcıların genellikle diğer babaları gözlemleyip onlarda olumlu buldukları davranışları örnek aldıkları bununla birlikte olumsuz olarak algıladıkları veya eleştirel yaklaştıkları davranışlardan ders çıkardıkları anlaşılmaktadır.

Diğer babalarla olan ilişkilerimi ben önemsemiyorum (K2). Katılımcının bu ifadesi diğerlerinden ayrılmakta ve temanın kapsamına yeni bir boyut getirmektedir.

Kıyaslama yapıyorum tabi ama baktığım zaman heh ben de böyle yapıyorum veya acaba bu kadar sert davranmalı mıyım diye düşünmeme sebep oluyor. Ama genelde karşı tarafın uygun yönlerini almaya çalışıyorum (K3)

Olumlu veya olumsuz muhakkak hareketleri gözlemlemek önemli (K1)

Babaların Babalık Deneyimleri

Katılımcı babalara çocuklarıyla birlikte geçirdikleri zaman hususunda soru yöneltilerek bu konudaki yaşantı ve fikirleri öğrenilmeye çalışılmıştır. Babaların beyanları 3 koda ayrılarak incelenmiştir. Bu kodlar çocuklarıyla arkadaşça ilgilenmek, çocuklarla az görüşebilmek ve çocuklarla dışarıda zaman geçirmek şeklindedir. Bu kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 7: Babalık Deneyimleri

Tema	Kodlar	Katılımcılar	Frekans
	Çocuklarla Arkadaşça İlgilenmek	K1, K3, K6	3
Babalık Deneyimleri	Çocuklarla Az Görüşebilmek	K1, K2, K4, K7	4
	Çocuklarla Dışarıda Zaman Geçirmek	K3, K4, K6, K8	4

Tablo 7’de yer alan kodlara bakıldığında babaların çocuklarıyla arkadaşça ilgilendiği (f=3), çocuklarla fazla zaman geçiremedikleri veya mekânsal olarak uzak oldukları (f=4) ve çocuklarla dışarıda zaman geçirmeyi tercih ettikleri (f=4) görülmektedir. Bu veriler katılımcıların yarısının çocuklarıyla çeşitli sebeplerden dolayı az miktarda süre görüşebildiklerini göstermektedir. Katılımcıların çocuklarıyla yeterli zaman geçiremediğini düşünmelerine yol açan sebeplerin başında iş yaşantısı ve mekânsal uzaklık yer almaktadır.

İşlerimiz dolayısıyla çok fazla vakit geçiremiyoruz çocuklarımızla ama onlarla iletişimimi çok sıkı tutmaya çalışıyorum sürekli konuşarak şakalaşarak muhabbet etmeye çalışarak onların dünyasına girmeye çalışarak geçiriyorum genelde iletişimimi (K1)

Çocuklarımla geçirdiğim zamanı eğer notlandırmak istersem 100 üzerinden 100 bile yetmeyebilir (K2). Katılımcı, babalık hissini not sistemiyle ilişkilendirmesi ve bunu dahi yetersiz görmesiyle babalık deneyimi temasına yoğun duygu hissiyatını yansıtmaktadır.

Babaların Ebeveynlik Tarzları

Katılımcı babalara benimsedikleri, uyguladıkları ebeveynlik tarzları hususunda soru yöneltilerek yaklaşımları öğrenilmeye çalışılmıştır. Babaların beyanları 3 koda ayrılarak incelenmiştir. Bu kodlar serbest babalık, otoriter-serbest karışık babalık ve arkadaşça yaklaşan baba şeklindedir. Bu kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 8: Ebeveynlik Tarzı

Tema	Kodlar	Katılımcılar	Frekans
	Serbest	K1, K3, K4, K5, K8	5
Ebeveynlik Tarzı	Otoriter-Serbest Karışık	K2, K6, K7	3
	Arkadaşça	K1, K3, K6	3

Tablo 8 incelendiğinde ebeveynlik tarzı temasında serbest ebeveynlik kısmında diğer durumlara oranla yüksek frekans (f=5) olduğu görülmektedir. Otoriter-serbest karışık ve arkadaşça yaklaşan babaların sayısı (f=3) katılımcıların yarısından azdır. Katılımcı babaların kendi yaşantıları ve tecrübeleri sonucunda çocukları daha serbest bırakma eğiliminde oldukları görülebilmektedir ancak bazı katılımcılarda bu durum belirli sınırlamalara tabi durumdadır. Tablo 1’de bulunan serbest bırakma kodunun tablo 8’de bulunan ebeveynlik tarzı temasındaki serbest ebeveynlik koduyla uyumlu olduğu görülmektedir.

Aslında benim ebeveynlik tarzım otoriter ve serbestlik konusunda ikisine de müsait çünkü insanlık konusunda dürüstlük konusunda otoriterim yani çoğu davranışları tasvip etmediğim zaman

bunlara karşı tavrımı koyarım ama serbestlik konusunda da onları kısıtlamam. Hiçbir zaman kısıtlamadım (K2)

Bizim çocukluğumuzda her istediğimiz olmazdı. Her dediklerini yapmaya ama sebepleriyle açıklamaya çalışıyorum. Serbest diyebiliriz yani (K3)

Babaların Helikopter Ebeveynlik Kavramına Yaklaşımı

Katılımcı babalara helicopter ebeveynlik hususunda soru yöneltilerek bu konudaki görüşleri öğrenilmeye çalışılmıştır. Babaların beyanları 3 koda ayrılarak incelenmiştir. Bu kodlar helicopter ebeveynliği destekleyen, eleştiride bulunan ve koşullu şeklinde destekleyenler şeklindedir. Kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 9: Helikopter Ebeveynliğe Yaklaşım

Tema	Kodlar	Katılımcılar	Frekans
Helikopter Ebeveynliğe Yaklaşım	Destekleme	K4, K8	2
	Eleştirme	K1, K2, K5, K7	4
	Koşullu Destekleme	K3, K6	2

Tablo 9 incelendiğinde Babaların helicopter ebeveynliğe yaklaşımında tam bir fikir birliğine varmadığı görülmekle birlikte negatif bakma sayısı daha ağır basmaktadır ($f=4$). Katılımcıların zıt fikir beyan etme oranı diğer temalara göre yüksektir. Katılımcı 1 ve katılımcı 4 ifadeleri incelendiğinde durum net olarak görülebilmektedir. Katılımcıların bir kısmı helicopter ebeveynliğin çocukların sorumluluk sahibi olması ve bağımsız karar alma yeterliliğinin gelişmesine engel olabileceğini belirtmekte ve bu yönden eleştirmektedir. Çocuğu ön plana aldığı için destekleyen katılımcı da olmuştur ve olaya farklı açılardan bakıldığı görülmektedir. Farklı perspektifleri yansıtan ifadeler eklenmiştir.

Ben kesinlikle bu tarzı desteklemiyorum. Bence onlara daha çok kötülük yapıyorlar. Çocuk, kendi aile kurduğu zaman çocuklarına karşı herhangi bir yaptırım uygulayamayacak babalık rolü oturmamış olacak (K1)

Çocuğu ön planda tutan güzel bir yöntem (K4)

Katılımcı Babaların Babalık Konusunda Toplumda Konuşulmasını İstedikleri

Katılımcı babaların toplumda babalık konusunda konuşulmasını bekledikleri, istedikleri konular sorulmuştur. Verilen cevaplar 3 kod altında incelenmektedir. Kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 10: Babalık Hususunda Konuşulması İstenenler

Tema	Kodlar	Katılımcılar	Frekans
Babalıkla İlgili Konuşulması İstenenler	Babanın Toplum ve Çocuktaki Yeri	K1, K3, K7	3
	Doğru Babalık	K2, K6, K8	3
	Talepte Bulunmama	K4, K5	2

Tablo 10 incelendiğinde katılımcıların babalığın toplumda daha fazla konuşulmasını istediği, babanın şu an olduğundan daha farklı tanınması ve doğru babalığın faydalı olduğu yönünde ifadelerde bulunduğu görülmektedir(f=3). Ancak katılımcı 4 babalıkla ilgili konuşulma konusunda fazla beklentisi olmadığını, katılımcı 5 ise daha önce bu konuyu düşünmediğini bildirmiştir. Bu sebeple 2 katılımcının ifadeleri talepte bulunmama kodlamasına dahil edilmiştir. Katılımcılar, birlikte düşünüldüğünde ortak kümeler olsa da olaya kısmen farklı pencerelerden baktıkları söylenebilir.

Babalara biraz daha bence anlayış gösterilmeli (K1)

Babalığın biraz daha toplumda çocuklara uygun şekilde konuşulması gerektiğini söylüyorum. Toplumun gözünde başka bir baba var ama çocuğun gözündeki baba konuşulması gerekir (K3)

Fazla beklelimiz yok (K4)

Baba Adaylarına Mesaj

Katılımcı babaların baba adaylarına vermek istedikleri mesaj irdelenmiştir. Bu kısmın katılımcıların görüşme sürecinde eklemek istedikleri ek düşünceleri içermeye potansiyeli ve katılımcıların babalığı nasıl algıladığının daha net anlaşılması açısından ehemmiyetli olabileceği düşünülmektedir. Verilen cevaplar 3 kod altında incelenmektedir. Kodlara dahil olan katılımcıların frekans tablosu aşağıda verilmiştir:

Tablo 11: Baba Adaylarına Mesaj

Tema	Kodlar	Katılımcılar	Frekans
	Çocukları Sevmek	K1, K2, K3, K4, K6	5
Baba Adaylarına Mesaj	Çocuklarla İyi İletişim Kurmak	K1, K7, K8	3
	Yerinde ve Zamanında Davranmak	K5, K6	2

Tablo 11 incelendiğinde katılımcıların çoğunluğunun baba adaylarına çocukları sevmeye tavsiyesi olduğu görülmektedir (f=5). Bunu çocuklarla iletişim kurma vurgusu (f=3) takip etmektedir. Diğer mesaj konusu ise babaların çocuklarına yerinde ve zamanında davranması yönündedir(f=2). K7 ve K8 çocukları sevmek maddesinde yer almasa da iyi iletişim kurma ifadeleri sevgiye dayandırılabilir.

Gelecekteki nesiller şunu bilsinler ki çocuklarımız bizim istediğimiz gibi yetişmiyorlar veya bizim istediğimiz gibi büyümüyorlar bunu sözle yapamayız. Çocuk aileden gördükleri neyse onun yansımasıdır. Babalık çok önemli bir kavram çocuğunuzla iyi iletişim kurun (K1). Sadece sözlü telkin yerine davranışın ve model olmanın önemini vurgulayan ayrıca iletişime değinmesiyle çok yönlü bir bakış açısı katması yönleriyle temaya katkı sağlamaktadır.

Bazen kızıyoruz, bazen yanlış davranıyoruz belki ama her şeyin ilacı sevgi bence. Eğer babalar çocuklarını gerçekten severlerse çocuklarını kazanırlar diye düşünüyorum. O yüzden babalara tavsiyem çocuklarını sevmeleri olur (K6). Katılımcı baba adaylarına net bir mesaj vermekte ve sevginin kilitli kapılarını açabileceğini, çocukları kazanma yoluna ışık tuttuğunu belirtmesiyle bağlama katkıda bulunmaktadır.

SONUÇLAR ve TARTIŞMA

Güncel durumda yeni nesil babaların babalık açısından algılarının önceki nesle göre farklı açılardan değişiklik gösterdiği belirtilmektedir (Topal,2019). Araştırmada yer alan katılımcıların beyanları incelendiğinde kendi babalarından gördüğü davranışlardan farklı davranmaya çalışanlar olduğu gibi babasına benzemeye çalışan olduğu da görülmektedir. Çocukların denetimi ve onlar üzerinde otorite kurma bakımından önceki nesle göre daha serbest bırakma davranışını tercih edilmektedir. Bu duruma kendi babalarıyla olan geçmişi ve farklı babalardan gördükleri örnekler yol açmış olabilir. Kendi babalarından izin verici olmalarını bekleyerek büyüyenler böylece kendi çocuklarına karşı izin verici, serbest olma eğilimde bulunuyor olabilirler. Buna karşın otoriter baba ile büyüüp bunu benimseyen ve memnun olmakla birlikte çocuklarına da aynı yöntemi tercih edenler olabilmektedir.

Gün içerisindeki çalışılan saatlerin artması, sıkı iş temposunun ebeveynlik ilişkilerinin ve eşgüdümün olumsuz yönde etkilenmesine sebep olabileceği ifade edilmektedir (Ulucan,2024). Katılımcıların beyanlarına bakıldığında yoğun iş tempoları olduğu veya aileden mekânsal olarak uzakta çalıştıkları görülmektedir. Babaların ebeveynlik konusunda çocukların anneleriyle eşgüdümlü olmaktan kayda değer biçimde bahsetmediği de göz önüne alındığında iş temposunun eşgüdümün azalmasına ve çocukla olan iletişimde kopukluğa sebep olması olasıdır. Nitekim erkeklerin çalışma saatlerinin azalmasıyla erkekler üzerindeki zaman baskısının da azaldığı böylece aile-iş dengesinin sağlanmasının kolaylaştığı fakat çalışma saatleri artış gösterdiğinde zaman baskısıyla birlikte iş aile çatışması yaşandığı belirtilmektedir (Baykal ,2014). Fakat bunların aksine okul öncesi kurumlara devam eden çocukları olan 250 baba ile olan bir çalışmada babaların çocuklarıyla birlikte olduğu sürenin babayla evlat arasındaki ilişkiyi etkilemediği neticesine ulaşıldığı belirtilmektedir (Karasu,2022).

Helikopter ebeveynliğin aile bireyleri üzerinde çocuğun tüm yaşamı boyunca her an etkiye sebep olduğu söylenmekte ve çocuk üzerinde olumsuz etkilere sebep olduğunun bildirildiği ifade edilmektedir (Çetin ve Güleç 2020). Katılımcıların ifadeleri incelendiğinde helikopter ebeveynlik konusunda görüş birliği olmadığı fark edilmektedir. Bununla birlikte Çetin ve Güleç'in araştırmasındaki duruma paralel ifadelerde bulunan katılımcılar söz konusudur ve katılımcıların helikopter ebeveynliği negatif algılaması daha baskındır. Helikopter ebeveynlik sonucunda çocukların kendi sorumluluklarını almalarının güçleşmesi, kendilerini merkeze alarak etrafın kendisine hizmet etmesini beklemesi ve çocuğun otorite ile karşılaştığında çatışma eğilimine girmesi mümkündür. Kendi sorumluluklarını almalarının güçleşmesine karar ertelemesi dahil edilebilir ve bu konuda Çin bağlamındaki araştırmada helikopter ebeveynliğin ergen kişilerde karar ertelemeye yol açabileceği belirtilmektedir (Wu vd., 2023).

Babaların evlatlarının gelişmesinde, ailedeki ilişkilerin sağlıklı olmasında ve toplumun sağlıklı olmasında yer edindiği belirtilmektedir (Mercan ve Tezel, 2017). Katılımcılar da babaları benzer açılarda algılamaktadır. Toplumun ailelerden oluştuğu ve çocuğun aile içerisindeki yaşadıklarını hem çocukken hem ileri yaşantısında topluma aktardığı düşünüldüğünde aile içi ilişkinin kalitesinin önemli olduğu anlaşılmaktadır. Baba da bu kalitenin sağlanmasında önemli bir parça olarak yer almaktadır. Dolayısıyla babalar hem aile hem toplum için ehemmiyetlidir.

Katılımcı babalar genelde baba olmayı sorumluluk almak, çocukların ihtiyaçlarını karşılamak, onları sevmek ve şefkat göstermek olarak gördüğüne dair ifadeleri ve katılımcıların genel tablosu düşünüldüğünde aktif katılım gösteren, çocuklarıyla zaman geçirmeye çalışan, onların fiziksel ve duygusal beklentilerini göz önüne alan yaklaşım söz konusu olduğu söylenebilir. Dolayısıyla önceki zamanlara kıyasla babalığın katılımda bulunma, ortak ebeveynlik ve bakım verme açısından dönüştüğü belirtilen (Pekel, 2017) çalışmaya benzediği söylenebilir. Ancak katılımcıların ortak ebeveynliğe, çocuklarının anneleriyle nasıl iş birliğinde oldukları ve ortak deneyimlerine dair yeterince beyanda bulunmadıkları için bu açıdan sınırlı yorum yapılabilmektedir ve benzerlik bahsi geçen çalışmadaki ifadelerle uyumunu ya da uyuşmadığını söylemek zordur.

Katılımcıların günümüzdeki babalık davranışlarını çocuklarına sevgisini gizlemek yerine belli eden, çocuklarını fikirlerini dikkate alan, onlarla birlikte zaman geçirmeye çalışan, onlara karşı anlayışlı ve yumuşak olmaya çalışan babalar olarak algıladığı görülmektedir. Annelerin bakış açısına göre incelenen bir çalışmada çocuklarla zaman geçirme hususunda babaların evlatlarının yaşına göre farklılık gösterdiği belirtilmekte ve bunun sebebinin babalık rolleri konusunda bilgi eksikliği olabileceğine değinilmekte (Özyürek vd. 2020), babaların iş yoğunluğunun evlatlarıyla zaman geçirmelerine engel olabildiği, evlatlarıyla kaliteli zaman geçirmenin çocukların sosyal-duygusal açıdan gelişmesine katkı sağladığına ve babaların mutlu olmalarına sebep olduğuna inandıkları belirtilmektedir (Türkoğlu vd. 2013).

Literatürde babaların babalık rolü algısında etkiye sebep olan faktörler; ilk defa baba oldukları yaş, meslek, kaç tane çocuğu olduğu, çalışma durumları ve babalık hususunda bilgi alma yaşantıları gibi faktörlerle ilişkilendirilmektedir (Telli ve Özkan 2016). Bu çalışmada ise katılımcılar babalık rolünde etkilenmelerine en çok sebep olan faktörleri çevredeki diğer babaların davranışları, kişinin kendi babasının davranışları ve çocuklar şeklinde belirtmişlerdir. Beyan edilen ifadelerle bakıldığında başka babaların davranışlarına bakarak diğer babaların davranışları olumlu görülürse örnek alma, olumsuz görülürse oradan bir ders çıkarma yaklaşımının olduğu söylenebilir. 0-8 yaş arası çocukları olan babaları perspektif alan bir çalışmada babaların kendi babalarıyla olan teması idrak etme şeklinin kendi evladının bakımında rol alma üzerinde etkiye sebep olduğu, babanın baba olduğu yaş ve kendi yaşı ayrıca eş desteğinin çocuk bakımına katılma seviyesinde rol aldığı belirtilmektedir (Ünlü, 2010). Kendi babalarıyla olan münasebeti ortak bir bulgu iken eş desteği ve babalık yaşı gibi faktörler bu çalışmadaki katılımcılardan farklıdır. Katılımcıların beyanlarından Katılımcı babalar genelde baba olmayı sorumluluk almak, çocukların ihtiyaçlarını karşılamak, onları sevmek ve şefkat göstermek olarak görmektedirler. Bunlara bakarak katılımcıların babalığı çocuklarının ihtiyaçlarını önemseyen, onlara otorite konumu yerine arkadaş konumunda yaklaşmaya çalışan ve onların gelişimi için çaba gösterme niyetinde olan, ayrıca çocuğun kararlarını dikkate alıp birlikte plan yapan bireyler olarak algılandıkları söylenebilir. Akademisyen babalarla olan bir çalışmada da babaların çocuklarının yaşam deneyimleri hususunda sorumluluk almayı benimsediği belirtilmekte ayrıca babalık üzerinde etkiye sebep olan faktörün kültür olduğu hatta kültürün nasıl bir baba olunacağını belirlediği yönünde oldukları ifade edilmektedir (Erol vd., 2023). Erol ve diğerlerinin çalışmasında kültür faktörü öne çıkmış olup bu çalışmadaki babaların beyanlarından farklı bir faktör olarak ele alınabilir. Yeni dönemde babaların sınırlı duygusal katılım sağlayıcı kişi olarak algılandığı yönündeki görüşte değişme olduğu belirtilmekte ve bu değişim üzerinde internet ve sosyal medyanın yükselişinin rol oynadığı ifade edilmektedir (Wiradisuria vd., 2025).

Katılımcı babalar çoğunlukla serbest baba olmayı tercih etmektedir. Katılımcıların cevapları incelendiğinde görülmektedir ki babalar babalıktan hoşlanmaktalar. Çocuklarıyla vakit geçirme isteğinde oldukları fakat iş sebebiyle yeterince birlikte olamayanlar da dikkat çekmektedir. Bu durumla paralellik gösterebilen hususlara atıfta bulunan bir çalışmada babalardan çocuklara model olması, onların öğretmeni olması bunlara ek onlarla arkadaş olup çocuk bakımı ve sorumluluğunu da üstlenmesinin istendiği ayrıca eş olmanın sorumluluğunun da bulunmasıyla bu beklentilerin kimlik çatışmasına ve babaların kendi şahsına karşı yabancılaşmasına yol açtığı belirtilmektedir (Şenol ve Erdem 2018). Bu çalışma ile belirtilen ifadeler birlikte düşünüldüğünde günümüz iş yaşamının yoğunluğunun da katkısıyla babaların her talebe istenen düzeyde zaman ayıramadığı sonucuna varılabilir. Ancak yine de çocuklarıyla birlikte oldukları zamanı değerli gördükleri ve o anlarda mutlu hissettiklerini belirtmektedirler.

Veriler incelendiğinde babalığın toplumda daha çok konuşulması, çocukların babaları konusunda bilinçli olması konusunun ele alınması ve babalara karşı anlayışlı olunması yönünde fikirler belirtildiği görülmektedir. Katılımcıların ifadeleri ele alındığında bırakmak istedikleri mesajlar çocuk toplum için değerlidir ve çocuğun durumu ailenin bir yansımasıdır. Çocukların sevilmesi önemlidir, baba sevgisinden mahrum bırakılmamalıdır. İyi bir toplum iyi bir çocuk yetiştirmeye mümkündür. Çocuğa yerine ve zamanına göre davranmalıdır şeklinde

yorumlanabilir. İlgili çalışmalara bakıldığında çocukluğun mahallî ve global değişiklikler sebebiyle dönüştüğü, aile kurumu da sanayileşme sonrası hızlı değişimden payını aldığı bunlarla birlikte toplumun çocuklara perspektifi ve algısı değiştiği (Atila,2022), incelenen 100 adet reklamda en az işlenen değer baba sevgisi olduğu (Sezgin ve Çifci 2017), çocuklara olumlu örnek davranışların öğretilmenin önemli olduğu (Çiftçi, 1991), babaların evlatlarını sevmeye seviyeleri ve evlatlarıyla ilgilenme seviyeleri arasında pozitif korelasyon olduğu belirtilmektedir (Ekici ve Çalışandemir 2021).

Özdeniz (2020) çalışmasında babalardan beklentilerin maksimum düzeyde olduğu kodları “ilgi ve sevgi göstermek” şeklinde tespit etmiştir 8 katılımcının beyanlarını içeren bu çalışmada ise babaların katılımcıların çoğunluğu çocuklara sevgi gösterme hususuna vurguda bulunmuştur.

Sonuç

Sonuç olarak katılımcı babaların ifadelerine bakıldığında katılımcıların babalığı çocuğun ihtiyaçlarını gören, onlara sevgi ve şefkat gösteren onlar yerine plan yapmak yerine onların fikirlerini alan bireyler olarak algıladıkları, kendi babalık yaklaşımlarında zamanla değişiklik olduğu, helikopter ebeveynlik hususunda tam anlamıyla fikir birliğine varılmadığı, baba olma deneyiminden memnun gözüktükleri, katılımcı babaların çocukları toplumun önemli parçası olarak gördüğü bu önemli parçanın yetiştirilmesinde babanın önemli ve sorumlu olduğunu düşündükleri, kendi babalık algıları ile ifade ettikleri davranışların uyumlu olduğu çıkarımına ulaşılabilir. Bazı katılımcılar için günümüzdeki babalar serbest bırakan kimi için daha özenli kimi için ise sosyal medyanın sebep olmasıyla günümüzde babalık değerinin azalmış görüldüğü şeklindedir. Katılımcılar; babalığın toplumda daha fazla anlaşılması ve konuşulmasını isteyebilmekte, babaların çocuğuna sevgi göstermesine vurguda bulunmakta ve baba adaylarına çocuklarına sevgi göstermeleri konusunda tavsiyede bulunmaktadır.

Araştırmanın Sınırlılıkları

Araştırma kapsamında toplanan veriler 8 tane babadan elde edilen verilerle sınırlıdır. Araştırmaya katılan babalar en az 1 tane son çocukluk döneminde çocuğu bulunan babalarla sınırlıdır. Bazı katılımcıların bazı sorulara nitel araştırmanın derinliğine inmek için yeteri kadar uzunlukta cevap vermemesi de sınırlılık olarak yer almaktadır. Bu çalışmada katılımcı sayısının sınırlı olması (n=8), nitel araştırmaların doğasına uygun olmakla birlikte, bazı sınırlılıkları da beraberinde getirmektedir. Nitel araştırmalarda amaç genelleme yapmak değil, bireysel deneyimlerin derinlemesine anlaşılmasıdır (Creswell, 2013). Bu bağlamda, örneklem sayısının az olması, elde edilen verilerin istatistiksel temsiliyeti açısından sınırlı olsa da anlamsal temsiliyet ve derinlikli veri üretimi açısından yeterli görülmektedir (Patton, 2002). Ayrıca, veri doygunluğuna ulaşıldığı, yani yeni kodlamaların ortaya çıkmadığı görülmüştür. Katılımcıların çeşitli yaş gruplarından ve farklı sosyo-kültürel geçmişlerden seçilmesi, elde edilen kodların farklı bakış açılarını yansıtmalarını sağlamış ve çalışmanın içsel geçerliliğini artırmıştır. Bununla birlikte, farklı bölgelerden daha geniş katılımcı gruplarıyla benzer çalışmalar yapılarak temalar karşılaştırılabilir.

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Ek

GÖRÜŞME SORULARI
1. Kaç yaşındasınız?
2. Kaç çocuğunuz var?
3. Kaç yaşında baba oldunuz?
4. Çocuklarınız kaç yaşlarında?
5. Babanızla olan iletişiminizi kısaca nasıl tanımlarsınız?
6. Kendinizi bir baba olarak nasıl tanımlarsınız?
7. Babalık rolünüzde en çok etkilenmenize sebep olan faktörler nelerdir?
8. Babalık algınız zaman içinde değişikliğe uğradı mı? Uğradiysa bu değişiklikleri nasıl ifade edersiniz?
9. Günümüzde toplum içerisindeki babalık algısını nasıl değerlendiriyorsunuz Geçmişle kıyasladığınızda ne gibi farklılıklar görüyorsunuz?
10. Sizce günümüzde babalar baba olmayı nasıl algılıyorlar?
11. Babalar bu algılarına ne derece uyumlu davranıyorlar?
12. Benimsediğiniz babalık kavramı ile örtüşmeyen duygu ve düşüncelerin içinizden geçtiği oluyor mu? Oluyorsa genellikle hangisine uyumlu davranmaktasınız, neden?
13. Çocuklarınızla geçirdiğiniz zamanın kalitesini nasıl değerlendirirsiniz?
14. Ebeveynlik tarzınızı (otoriter, serbest vb.) nasıl tanımlarsınız? Bu tarzın seçiminde hangi sebepler yer almakta?
15. Helikopter ebeveynlik çocuklarıyla aşırı derecede ilgili olan, çocuk odaklı yaşayan, onlar yerine program yapan, yöneten ve müdahale eden ve mükemmeliyetçi olan anne babanın tutumlarını ifade eden kavram olarak tanımlanmaktadır. Bu tanımlı göz önüne alınca helikopter ebeveynlik ile ilgili ne düşünüyorsunuz?
16. Bu tarzı benimseyen veya benimsemeyen bir baba olarak deneyimlerinizi paylaşır mısınız?
17. Sizce helikopter ebeveynliğin çocuklara kısa ve uzun vadede nasıl yansımaları olabilir?
18. Diğer babalarla olan ilişkileriniz (arkadaşlar, aile üyeleri) babalık deneyiminizin nasıl etkilenmesine sebep olmakta?
19. Babalık hakkında toplumda daha fazla konuşulmasını beklediğiniz konular varsa neler?
20. Gelecekteki nesillere babalıkla ilgili mesaj göndermek isteseydiniz bu ne olurdu?
21. Ek olarak ifade etmek istediğiniz düşünceler var mı? Varsa neler?

The Perceptions of Fathers with Children in Late Childhood Regarding Current Fatherhood Roles

Ufuk Koçyiğit¹ Esat Şanlı²

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Abstract

This study aims to examine the perceptions, experiences, and evolving roles of fathers with children in late childhood (ages 6-12). Fatherhood is a significant aspect of an individual's life, influenced by cultural, social, and economic dynamics. Societal changes and personal experiences contribute to shifts in fatherhood perceptions and parenting practices. In this context, interviews were conducted with fathers using qualitative research methods. Data were collected through a semi-structured interview form consisting of 21 questions and analyzed using thematic analysis within the framework of phenomenological research design. As a result of the analysis, 12 themes were identified, addressing fathers' perceptions of fatherhood, parenting styles, and their alignment with societal norms of fatherhood. These themes were supported with frequency distributions. The findings shed light on various aspects, such as fathers' relationships with their own fathers, interactions with other fathers, and their perspectives on helicopter parenting. In the conclusion section, the findings were evaluated in terms of inconsistencies and variations in fatherhood roles, and insights into contemporary fatherhood were discussed. The study highlights that fatherhood is a dynamic concept subject to individual and societal transformations.

Keywords: Fatherhood, perception of fatherhood, fatherly behaviors, fatherhood experience

INTRODUCTION

Society is a dynamic system formed by the combination of various structures, and one of its most important components is the family. The family is defined as an institution that plays a fundamental role in the formation of the social structure, has specific functions, is shaped by both macro- and micro-level institutions, and in turn exerts influence over these structures as well (Karataş, 2001). The family occupies a significant place in individual development and provides a vital environment, especially for children. Generally consisting of a mother, father, and children, this structure meets fundamental needs such as shelter, nutrition, education, and social interaction.

Within the family, parents take on major responsibilities in the development of their children. The mother, particularly during the period from birth to school age, plays a central role in areas such as the child's nutrition, basic learning processes, and emotional support through love and affection. The father, on the other hand, is viewed as a protective figure. According to the Turkish Language Association, the term “father” also refers to “a person who is protective and filled with paternal feelings” (TDK, 2024).

¹ Master's Student, Department of Guidance and Psychological Counseling, Faculty of Education, Ondokuz Mayıs University, Samsun, Türkiye, kocyigit.ufuk.55@gmail.com, orcid.org /0009-0008-2724-0334

² Assoc. Prof. Dr. Esat Şanlı, Department of Guidance and Psychological Counseling, Faculty of Education, Ondokuz Mayıs University, Samsun, Türkiye, esat.sanli@omu.edu.tr, orcid.org /0000-0001-8227-8097

The parent-child relationship has a significant impact on the psychological, social, and cognitive development of the child. Studies have shown that family attitudes positively contribute to children's leadership skills (Saçan, 2023). Similarly, it has been found that parental involvement in a child's media use is significantly associated with lower levels of problematic media usage (Arlı, 2022). Therefore, the level of parental knowledge regarding child development plays a critical role in raising children to become well-adjusted individuals (Işık & İşlek, 2017).

Social transformations have also influenced the structure of the family. In this context, the concepts of nuclear and extended families have gained prominence. While a nuclear family consists of a mother, father, and child, an extended family encompasses a larger structure that includes multiple generations (Gürsoy & Coşkun, 2006). In extended families, multiple father-child and grandparent-grandchild relationships exist, whereas in nuclear families, individual relationships are more central.

Fathers play an important role in establishing a healthy family structure, supporting child development, and shaping the broader social framework. It has been noted that paternal involvement in child development is associated with improvements in children's self-regulation skills (Cingöz, 2024). Additionally, father involvement has been shown to significantly influence children's social competence and behavioral issues (Semiz, 2022). During adolescence, perceptions of fatherhood have been found to impact tendencies toward bullying, with a higher sense of paternal role awareness associated with a reduced likelihood of adolescents engaging in or being exposed to bullying (Kafalı, 2021).

In psychology, the concept of perception is defined as “becoming consciously aware of something by directing attention to it” (TDK, 2024). Accordingly, the perception of fatherhood refers to an individual's conscious awareness of paternal roles and responsibilities. Although in the past fathers were more authoritarian and spent less time on childcare, it has been reported that today's fathers spend more time with their children (Kakaliçoğlu, 2019). Generational differences also contribute to the transformation of this perception. For example, fathers under the age of 40 tend to embrace a more collaborative understanding of fatherhood compared to previous generations (Sümer, 2017). Similarly, the perception of fatherhood is influenced by factors such as socioeconomic status, number of children, and the age at which one becomes a father (Şahin, 2023).

In addition to social processes, media also plays a role in shaping perceptions of fatherhood. A study analyzing eleven commercial films and viewer comments found that fathers were portrayed as devoted to their families, well-groomed, and cooperative in domestic tasks—representing the image of the “modern father” (Türk, 2022). This indicates that the perception of fatherhood has changed in parallel with broader societal shifts.

Fatherhood holds significance not only within the family but also in the wider social context. Research has shown that perceptions and roles of fatherhood have a determining impact on child development, family dynamics, and the overall social structure. The increased time fathers spend with their children contributes positively to their development and supports the upbringing of well-adjusted individuals (Uğur, 2020). From the perspective of mothers, the paternal role is most often described as “protective and supportive,” with a growing emphasis on father figures who “complement the maternal role” and “provide affection and care” (Özdeniz, 2020).

In conclusion, perceptions and roles of fatherhood have changed over time and are shaped by diverse social, economic, and cultural factors. Today, fathers are expected to take a more active role in supporting child development. This shift contributes not only to strengthening the family structure but also to the psychosocial development of individuals.

In recent years, the role of fatherhood has undergone considerable changes influenced by social dynamics and personal experiences. There has been a transition from traditional fatherhood models to more active and participatory approaches. This shift has affected fathers' parenting styles, their relationships with their children, and their ability to adapt to societal expectations. This study explores the perceptions, behaviors, and changing experiences of fatherhood among

fathers with children aged 6 to 12. Specifically, it investigates how fathers interpret their understanding of fatherhood today, the extent to which their behaviors align with these perceptions, and the key factors influencing their paternal roles.

The study also focuses on parenting styles, the influence of fathers' relationships with their own fathers on their current experiences, and how interactions with other fathers shape their approach to fatherhood. In addition, their views on the concept of helicopter parenting, the topics they believe should receive more public attention regarding fatherhood, and the messages they wish to convey to prospective fathers are key components of the research. By examining the experiences of contemporary fathers in depth, the study aims to offer a framework for understanding the changing nature of fatherhood.

Purpose of the Study

This study aims to examine the current perceptions of fatherhood, experiences, and changing paternal roles among fathers who have children in late childhood (ages 6–12).

METHOD

This section includes information regarding the study group, the research design, the data collection tool applied, and the data collection process.

Research Design

This study employed a phenomenological approach, one of the qualitative research designs. Phenomenology focuses on understanding how individuals experience a specific phenomenon (Creswell, 2013). Specifically, this study adopted Van Manen's hermeneutic phenomenology approach. Van Manen (1990) emphasizes interpreting the meaning of experiences through individuals' narratives.

In this context, the experiences and perceptions of fathers regarding their contemporary fatherhood roles were explored through their own expressions, aiming to uncover the subjective meanings of these experiences. Therefore, the phenomenological design aligns with the study's purpose and is considered a methodologically appropriate choice.

Study Group

The study group consisted of eight fathers with children in late childhood. The research was conducted between December 11, 2024, and March 29, 2025. Selecting fathers with children in late childhood enabled the study to examine perceptions of fatherhood across past and present periods in conjunction with existing literature, while also contributing to reflecting the perceptions of fathers in the current period. The participants' ages ranged between 38 and 45 years.

Data Collection and Analysis

To explore fathers' perceptions of fatherhood, contemporary fatherhood approaches, fatherhood behaviors, and experiences, a semi-structured interview tool comprising 21 questions was used. Four of these questions addressed personal information, and one inquired whether participants wished to express additional views. The data collection tool is provided in the appendix. The remaining questions pertained to fatherhood and parenting. Information was gathered on participants' perceptions of fatherhood, fatherhood behaviors, thoughts on past and current approaches to fatherhood, parenting styles, perspectives on the concept of helicopter parenting, and fatherhood experiences.

The data obtained from participants' responses were analyzed, and their approaches were interpreted. Data analysis was conducted based on Braun and Clarke's (2006) thematic analysis approach. The coding process was performed manually, without the use of qualitative data analysis software.

The coding was carried out by the first author, with the second author providing consultancy throughout the analysis process. Interview data were carefully examined, meaningful statements were coded, and these codes were subsequently organized under themes. The second author contributed to ensuring consistency through consultancy and a control mechanism. The validity and richness of the data were supported by including participant quotations within the text, with interpretations presented without losing their contextual integrity. The point at which participants began repeating similar statements was considered an indicator of data saturation. Selecting participants from diverse age groups and socio-cultural backgrounds ensured that the derived codes reflected varied perspectives, enhancing the study's internal validity. Despite the limited number of participants, efforts were made to ensure validity and reliability by preserving the depth and coherence of the data.

FINDINGS

This section presents the findings based on the data collected in the study. It primarily addresses perceptions of fatherhood, fatherhood experiences, and the changes in fatherhood over time. The study seeks answers to the sub-questions identified earlier. Selected statements from the interviews are included as examples. The collected data have been categorized into themes and codes. A total of 11 themes were identified. The participants' statements were grouped under these themes and codes, and presented in tables. Participants were labeled as P1, P2, P3, P4, P5, P6, P7, and P8. The number of participants associated with each code is indicated in the frequency section.

Perceptions and Behaviors of Fathers with Children in Late Childhood, and Their Interpretations of Contemporary Fatherhood

Fathers were asked how they perceive the concept of fatherhood. In this context, six codes were identified: providing support, showing affection, friendship, taking responsibility, allowing independence, and preparing the child for life. The frequency table showing the number of participants under each of these codes is presented below:

Table 1. Perception of Paternity

Theme	Codes	Participants	Frequency
Perception of Paternity	To Support	P1, P2, P3, P6	4
	Showing affection	P2, P3, P4, P6, P8	5
	Friendship	P1, P3, P7, P8	4
	Taking responsibility	P1, P2, P6	3
	Granting Children Autonomy	P1, P2, P3, P4, P5, P7	6
	Preparing them for life	P1, P2, P6, P7, P8	5

When examining Table 1, it is observed that participants' perceptions of fatherhood, either from their own perspective or in the context of contemporary fatherhood, reveal high frequencies in the themes of granting children autonomy ($f=6$), preparing them for life ($f=5$), and expressing affection ($f=5$). Most participants expressed views aligned with supporting their children and showing affection. However, Participant P5 stated that contemporary fathers lack affection to some extent and prioritize their own concerns over spending time with their children. Despite this, considering the general statements, P5 was included in the autonomy-granting code. The perception of expressing affection aligns with the participants' overall statements. Participants generally find fatherhood fulfilling and consider it significant.

The family is a highly important concept, and I believe the father is its cornerstone. The better a father behaves, the more he can be a good friend to his children, and the more he values their emotions and feelings, the more those children will reflect this in their own children in the future. Therefore, I think we should be more mindful of our actions. (P1). This statement not only articulates the participant's subjective perception of fatherhood but also contributes to deepening the topic.

I strive for their success in life. I think being a father is wonderful. (P2)

Fathers are more about meeting needs, providing affection, and are always the second person sought after.(P3). Although not explicitly stated, P3's reference to the "second person" suggests that the first is likely the mother, adding a distinct perspective to the theme.

As far as I know, fathers today are more libertarian. As a teacher and due to my own father's influence, I have a libertarian fatherhood approach (P4).

They lack affection to some extent. They think too much about themselves, so they don't think enough about their children(P5). Unlike other participants, P5 critiques fathers for lacking affection, offering a different perspective on the theme.

In my opinion, no matter the circumstances, the most important element is affection. I believe children who feel affection grow up healthier (P6).

Fathers' Approaches and Communication Styles with Their Children

Participants were asked questions to elicit descriptions of their experiences with their children, thereby obtaining information about their approaches toward them. Within this scope, the approaches were categorized into codes including valuing children's opinions, being able to say no, encouraging responsibility, striving to fulfill children's wishes, and preferring to communicate by providing explanations when incidents occur with their children. The frequency table of participants included in these codes is provided below:

Table 2. Fathers' Approaches and Communication Styles with Their Children

Theme	Codes	Participants	Frequency
	Seek their children's opinions	P1, P2, P3, P4, P6, P8	6
	Being able to say no	P2, P3, P7	3
Approaches and Communication Styles with Their Children	Encouraging children to take responsibility	P1, P2, P3, P5, P6	5
	Fulfilling children's wishes	P1, P2, P3, P7, P8	5
	Giving explanations in different circumstances	P1, P3, P8, P6	4

When Table 2 is examined, it is observed that nearly all participants (f=6) expressed that they give importance to or seek their children's opinions. Encouraging children to express their wishes and take responsibility was also frequently mentioned (f=5). Additionally, some fathers (f=4) stated that they provide explanations and try to inform their children in situations where they disagree, need to say "no," or face similar circumstances. When these behaviors are analyzed, it appears that the fathers' actions are generally consistent with their perceptions of fatherhood. Furthermore, Participant 1 described himself as a permissive father and frequently expressed views aligned with this stance. He also criticized the model of fathers who make plans and decisions on behalf of their children, arguing that such children may struggle to establish a healthy sense of fatherhood in the future and may fail to exercise authority as parents. His comments

suggest an approach not of complete permissiveness, but of 'structured freedom,' where rules still exist.

We must also know when to say no. We need to explain to children that not everything they want can happen immediately, and that sometimes things take time. Instead of simply saying yes or no, we should explain why it's a yes or why it's a no. Every behavior should come with a reason. (P3). Participant 3 emphasizes cause-effect reasoning and the importance of informing children in his communication style. His detailed approach contributes meaningfully to the theme.

From my oldest child to the youngest, if they want or choose something, I try to make an effort to get it for them.(P2)

They need to learn to take responsibility. It is important that they begin preparing now for the responsibilities they will face in life.(P6)

Factors Influencing Fathers in the Adoption of Their Paternal Roles

Fathers participating in the study were asked to identify the factors they believed had the greatest influence on how they enacted their roles as fathers. The data obtained were analyzed under three main categories: their own children, life experiences and observations of other fathers, and their own fathers. The environmental category also includes the behaviors of other fathers and events experienced in their surroundings. The frequency table of participants associated with each category is presented below:

Table 3. Factors Influencing Fathers in the Adoption of Their Paternal Roles

Theme	Codes	Participants	Frequency
Factors Influencing Fathers in the Adoption of Their Paternal Roles	Children	P2, P4, P6,P8	4
	Environment	P1, P3, P4, P7, P8	5
	Own Father	P1, P4, P5, P6, P8	5

When examining Table 3, it is observed that the environment, the behaviors of other fathers, and the behaviors of participants' own fathers (f=5) are influential factors. Additionally, fathers who stated that their own children influence their behavior (f=4) are also represented. Overall, a relatively even distribution is evident. Participants P4 and P8 appear in every code, indicating their openness to multiple influencing factors. As discussed in the theme of experiences with other fathers in Table 6, P1 notes that the behaviors of other fathers influence their fatherhood role.

What matters to me is my own children. Their behavior toward me and my behavior toward them take precedence. I don't take any other father as an example (P2).

Not every child is the same. They say no two of five siblings are alike. A child's temperament inevitably affects your behavior (P8).

For instance, when I see a friend yelling at their child, I observe the child's distress or emotional state in that moment. This teaches me not to yell at or be harsh with my own child, leading me to draw such conclusions (P1).

No matter what, a person is influenced by their own father. Sometimes, I find myself doing things to my child that I criticized in my own father. I believe a person's relationship with their own father greatly shapes their relationship with their child (P6).

Changes in Participant Fathers' Perceptions of Fatherhood Over Time

An attempt was made to determine whether the participant fathers' perceptions of fatherhood have changed over time, and a question was posed to address this. Instances of change were identified, and the obtained data were analyzed under three codes: more experienced, more

permissive, and more authoritative. The frequency table of participants included in these codes is provided below:

Table 4: Changes in father's perceptions of fatherhood over time

Theme	Codes	Participants	Frequency
Changes in father's perceptions of fatherhood over time.	More experienced	P1, P2, P4, P6, P7	5
	More permissive	P5, P6, P8	3
	More authoritarian	P3, P7	2

When examining Table 4, it is observed that each participant perceives changes in their fatherhood over time. Many fathers emphasize becoming more experienced or mature ($f=5$). There are also fathers who describe themselves as more permissive ($f=3$) or more authoritarian ($f=2$). Over time, participants have gained experience through spending time with their children and sharing common experiences with them. Some participants have also engaged in self-reflection or learned lessons during this process. The presence of contrasting changes may be related to experiencing different life situations or the varied interpretations of those experiences.

As in any other field, individuals can improve themselves in fatherhood over time. They recognize their shortcomings, engage in self-criticism, and work to improve them. I see myself as a somewhat more mature father now compared to the early stages of my fatherhood (P1).

With my first child, I was a more permissive father, allowing almost everything. With the second, I learned to say no more often (P3).

I used to be stricter; now, I am softer compared to before (P5).

At first, I had a more idealistic approach. Over time, as I realized I expected too much from my child, I began to adopt a more flexible attitude (P6).

These statements contribute to the theme by expressing participants' reflections on their changes, distinguishing between their earlier and current selves.

Changes in Fatherhood within Society

Participants were asked questions regarding fathers in society to explore their views on other fathers and the general trends within the community. Fathers' statements were analyzed under five codes: more attentive fatherhood, more permissive fatherhood, affectionate fatherhood, devalued fatherhood, and more understanding fatherhood. The frequency table of participants included in these categories is presented below:

Table 5: The Changing Role of Fatherhood in Society

Theme	Codes	Participants	Frequency
The Changing Role of Fatherhood in Society	More attentive	P2, P6, P8	3
	More permissive	P3, P4, P6, P7	4
	More affectionate	P2, P6, P7	3
	Devalued	P3, P5, P6, P8	4
	More understanding	P1, P6, P8	3

When examining Table 5, it becomes clear that there is no complete consensus on a single point. Fathers have also expressed various changes in their statements. For example, participant P6 is included in every code, while P8 has expressed three different changes. Therefore, it is understood that changes are not viewed from a single perspective. Upon analyzing the codes, they are categorized as more attentive (f=3), more permissive (f=4), more affectionate (f=3), devalued (f=4), and more understanding (f=3).

I am currently a father who allows more freedom and whose children are somewhat more independent. In the past, for example, we used to be afraid of our fathers, but in this period, children are not afraid (P4).

It seems that fathers in the past were more valued (P3).

Nowadays, fathers treat their children with more care and respect. Fathers in the past never clearly showed their affection to their children. Therefore, the fathers of that generation, who were once prospective fathers themselves, also grew up with certain deficiencies. They started life somewhat behind, without experiencing paternal affection (P2).

These statements contribute to the theme by addressing the changes in fatherhood between past experiences and the present from different perspectives.

Participants' Experiences with Other Fathers

The interactions and experiences of participant fathers with other fathers in their environment were examined. In this context, the focus was not solely on direct communication but also on the observation of other fathers' behaviors. The fathers' statements were analyzed and categorized into five codes. The frequency table of participants included in these codes is provided below:

Table 6: Communication with other Fathers

Theme	Codes	Participants	Frequency
Participants' Experiences with Other Fathers	Modeling	P1, P4, P3, P7	4
	Drawing a Lesson and Seeing Them as Wrong	P1, P3, P5, P6	4
	Disregarding	P2, P8	2

When examining Table 6, participants stated that they modeled their behavior after other fathers (f=4), or that observing other fathers led them to draw conclusions or think differently from those who displayed certain behaviors (f=4). Two participants expressed that they did not consider their relationships with other fathers important. Generally, it appears that participants observe other fathers, adopting behaviors they find positive, while learning lessons from behaviors they perceive as negative or approach critically.

"I do not care much about my relationships with other fathers" (P2). This statement stands out from the others and introduces a new dimension to the theme.

"I do make comparisons, of course, but when I observe, it makes me think, 'Oh, I do it this way too,' or 'Should I be this strict?' However, I generally try to adopt the appropriate aspects of others' behavior" (P3).

"Observing behaviors, whether positive or negative, is definitely important" (P1).

Fathers' Experiences of Fatherhood

Participants were asked questions regarding the time they spend with their children to understand their experiences and perspectives on this matter. Fathers' statements were analyzed under three codes: engaging with their children in a friendly manner, limited interaction with

children, and spending time outdoors with children. The frequency table of participants included in these categories is presented below:

Table 7: Fathers' Experiences of Fatherhood

Theme	Codes	Participants	Frequency
Experiences of Fatherhood	Engage with their children in a friendly manner	P1, P3, P6	3
	Spend limited time with their children	P1, P2, P4, P7	4
	Spending time with their children outdoors	P3, P4, P6, P8	4

When examining the codes in Table 7, it is observed that fathers engage with their children in a friendly manner ($f=3$), spend limited time with their children or are spatially distant ($f=4$), and prefer spending time with their children outdoors ($f=4$). These data indicate that half of the participants interact with their children for a limited amount of time due to various reasons. The primary reasons cited by participants for not spending sufficient time with their children are work commitments and spatial distance.

Due to our work, we cannot spend much time with our children, but I try to maintain strong communication by constantly talking, joking, and engaging in conversations, attempting to enter their world to sustain our interaction (P1).

If I were to rate the time I spend with my children, even 100 out of 100 wouldn't suffice (P2). By associating the fatherhood experience with a rating system and deeming it insufficient, this participant reflects intense emotional sentiment within the theme of fatherhood experience.

Fathers' Parenting Styles

Participants were asked about the parenting styles they adopt and apply, aiming to understand their approaches. The fathers' statements were analyzed and categorized into three codes: permissive fatherhood, a mix of authoritative and permissive fatherhood, and friendly fatherhood. The frequency table of participants included in these codes is provided below:

Table 8: Parenting Styles

Theme	Codes	Participants	Frequency
Parenting Styles	Permissive	P1, P3, P4, P5, P8	5
	Mixed authoritarian-permissive	P2, P6, P7	3
	Friendly	P1, P3, P6	3

When examining Table 8, it is observed that within the parenting style theme, the permissive parenting category shows a higher frequency ($f=5$) compared to other categories. The number of fathers with mixed authoritarian-permissive or friendly approaches ($f=3$) is less than half of the participants. It appears that, based on their own experiences, participant fathers tend to allow their children more freedom, although for some participants, this freedom is subject to certain limitations. The permissive code found in Table 1 aligns with the permissive parenting code within the parenting style theme in Table 8.

My parenting style is actually both authoritarian and permissive because, in terms of humanity and honesty, I am authoritarian. That is, when I disapprove of most behaviors, I take a firm stance against them, but in terms of freedom, I do not restrict them. I have never restricted them (P2).

In our childhood, we did not get everything we wanted. I try to make them understand the reasons behind 'no' responses. So, we can say it is permissive (P3).

Fathers' Perspectives on Helicopter Parenting

Participants were asked questions about helicopter parenting to learn their views on the topic. Fathers' statements were analyzed under three codes: supporters of helicopter parenting, critics, and conditional supporters. The frequency table of participants included in these categories is presented below:

Table 9: Fathers' Perspectives on Helicopter Parenting

Theme	Codes	Participants	Frequency
	Supporting	P4, P8	2
Fathers' Perspectives on Helicopter Parenting	Criticizing	P1, P2, P5, P7	4
	Conditional Support	P3, P6	2

Upon examining Table 9, it is observed that fathers do not fully agree on their approach to helicopter parenting, with a negative perspective being more prevalent ($f=4$). The rate of conflicting opinions among participants is higher compared to other themes. This is clearly evident in the statements of Participants P1 and P4. Some participants indicated that helicopter parenting may hinder children's development of responsibility and independent decision-making skills, criticizing it on these grounds. However, some participants supported it for prioritizing the child, demonstrating that the issue is viewed from different perspectives. Statements reflecting these diverse perspectives are included below.

I absolutely do not support this style. I believe it does more harm to them. When a child starts their own family, they will lack the ability to enforce any boundaries with their children, and their fatherhood role will remain underdeveloped (P1).

It's a good method that prioritizes the child (P4).

Topics Participant Fathers Wish to See Discussed in Society Regarding Fatherhood

Participants were asked about the topics they expect or desire to be discussed in society concerning fatherhood. The responses were analyzed and categorized into three codes. The frequency table of participants included in these codes is provided below:

Table 10: Topics Participant Fathers Wish to See Discussed in Society Regarding Fatherhood

Theme	Codes	Participants	Frequency
	The Father's Role in Society and in the Child's Life	P1, P3, P7	3
Fathers Wish to See Discussed in Society Regarding Fatherhood	Appropriate fatherhood	P2, P6, P8	3
	Lack of demand	P4, P5	2

When examining Table 10, it is observed that participants expressed a desire for fatherhood to be discussed more openly in society, for fathers to be recognized differently than they currently are,

and for the benefits of appropriate fatherhood to be acknowledged ($f=3$). However, participant 4 indicated having little expectation regarding discussions about fatherhood, and participant 5 stated that they had not previously considered this topic. Therefore, the statements of these two participants were coded under "lack of demand." While there are some commonalities among participants, it can be said that they view the issue from somewhat different perspectives.

Fathers should be shown a bit more understanding, in my opinion (P1).

I believe that fatherhood should be discussed in society more appropriately for children. There is one image of a father in society, but the father as seen through the eyes of the child should be addressed (P3).

We do not have high expectations (P4).

Message to Prospective Fathers

The messages that participant fathers wished to convey to prospective fathers were examined. This section is considered important as it may include additional thoughts participants wanted to share during the interview process and provide clearer insight into how they perceive fatherhood. The responses were analyzed under three codes. The frequency table of participants included in these codes is presented below:

Table 11: Message to Prospective Fathers

Theme	Codes	Participants	Frequency
	Love their children	P1, P2, P3, P4, P6	5
Message to Prospective Fathers	Establishing communication with children	P1, P7, P8	3
	Behaving appropriately and timely with their children	P5, P6	2

Upon examining Table 11, it is observed that the majority of participants advise prospective fathers to love their children ($f=5$). This is followed by an emphasis on establishing communication with children ($f=3$). Another message pertains to fathers behaving appropriately and timely with their children ($f=2$). Although Participants P7 and P8 are not included in the code for loving children, their statements about good communication can be associated with affection.

Future generations should know that our children do not grow up or develop as we wish simply through words. A child is a reflection of what they observe in their family. Fatherhood is a highly significant concept, so maintain good communication with your child (P1). By emphasizing the importance of behavior and role-modeling over mere words, as well as addressing communication, this statement contributes a multifaceted perspective to the theme.

Sometimes we get angry, sometimes we act wrongly, but I believe the remedy for everything is affection. If fathers genuinely care for their children, I think they can win them over. Therefore, my advice to fathers is to cherish their children (P6). This participant provides a clear message to prospective fathers, highlighting that affection can unlock barriers and pave the way for connecting with children, thereby contributing to the context.

RESULTS AND DISCUSSION

It is noted that the perceptions of contemporary fathers regarding fatherhood differ in various aspects compared to previous generations (Topal, 2019). Upon examining the participants' statements, it is evident that some strive to behave differently from their own fathers, while others aim to emulate them. In terms of controlling children and establishing authority, a preference for

a more permissive approach compared to previous generations is observed. This tendency may stem from participants' past experiences with their own fathers and examples observed from other fathers. Those who grew up expecting a permissive approach from their fathers may, in turn, adopt a permissive and lenient stance toward their own children. Conversely, some participants who grew up with an authoritative father, embraced this approach, and were satisfied with it, may choose to apply the same method to their children.

The increase in working hours and intense work schedules can negatively impact parenting relationships and coordination (Ulucan, 2024). Participants' statements reveal that they experience demanding work schedules or work spatially distant from their families. Considering that fathers rarely mention significant coordination with their children's mothers in parenting, it is plausible that intense work schedules contribute to reduced coordination and disruptions in communication with their children. Indeed, it is noted that a reduction in men's working hours alleviates time pressure, facilitating a balance between work and family life, whereas increased working hours lead to time pressure and work-family conflict (Baykal, 2014). However, contrary to these findings, a study involving 250 fathers with children attending preschool institutions concluded that the amount of time fathers spend with their children does not affect the father-child relationship (Karasu, 2022).

It is stated that helicopter parenting exerts a continuous influence on family members throughout a child's life and is reported to have negative effects on children (Çetin & Güleç, 2020). Analysis of participants' statements reveals a lack of consensus regarding helicopter parenting. Nevertheless, some participants' views align with the findings of Çetin and Güleç's study, with a predominant negative perception of helicopter parenting. Helicopter parenting may hinder children's ability to take on responsibilities, foster expectations that others should cater to their needs, and lead to conflicts when confronted with authority. Decision procrastination can be included among the difficulties in taking responsibility, and a study in the Chinese context suggests that helicopter parenting may lead to decision procrastination in adolescents (Wu et al., 2023).

Fathers are recognized as playing a significant role in their children's development, fostering healthy family relationships, and contributing to a healthy society (Mercan & Tezel, 2017). Participants also perceive fathers in a similar light. Considering that society is composed of families and that children reflect their family experiences both during childhood and later in life, the quality of family relationships is of paramount importance. Fathers are a critical component in ensuring this quality. Consequently, fathers hold significant importance for both family and society.

Participants generally perceive fatherhood as taking responsibility, meeting children's needs, loving them, and showing affection. Considering the overall responses, it can be stated that the participants demonstrate an active involvement approach, trying to spend time with their children and considering their physical and emotional expectations. Thus, it resembles findings from previous studies (Pekel, 2017), which indicate that fatherhood has transformed in terms of involvement, co-parenting, and caregiving compared to earlier periods. However, since participants did not sufficiently comment on co-parenting, their collaboration with the children's mothers, or their shared experiences, interpretations in this regard are limited. Consequently, it is difficult to confirm whether these findings align with those in the referenced studies.

Participants perceive modern fatherhood as one where fathers openly show their affection rather than hiding it, consider their children's opinions, attempt to spend time together, and try to be understanding and gentle. A study examining mothers' perspectives notes that fathers' time spent with children varies according to the child's age and that this may stem from a lack of knowledge about fatherhood roles (Özyürek et al., 2020). It is also highlighted that fathers' work commitments can hinder time spent with their children, while quality time positively contributes to children's social-emotional development and fathers' happiness (Türkoğlu et al., 2013).

Factors influencing fathers' perceptions of their paternal role in the literature include age at first fatherhood, profession, number of children, employment status, and experiences of acquiring

knowledge about fatherhood (Telli & Özkan, 2016). In this study, participants identified the most influential factors on their fatherhood role as the behaviors of other fathers in their environment, their own fathers' behaviors, and their children. According to their statements, fathers tend to model positive behaviors observed in others and learn lessons from behaviors they view negatively. A study focusing on fathers with children aged 0–8 indicates that the nature of their relationship with their own fathers affects their involvement in caregiving, and that fatherhood age, current age, and spousal support also play roles in participation levels (Ünlü, 2010). While the relationship with their own fathers is a common finding, factors like spousal support and fatherhood age differ from those of participants in this study.

Based on participants' statements, fathers generally view fatherhood as responsibility-taking, meeting children's needs, loving them, and showing care. It can be suggested that participants perceive fatherhood as an approach that prioritizes children's needs, seeks to relate as a friend rather than an authority figure, and makes efforts toward the child's development while considering their decisions and planning together. A study involving academic fathers also found that fathers embrace responsibility for their children's life experiences, and that culture significantly influences fatherhood, even determining what kind of father one becomes (Erol et al., 2023). The cultural factor highlighted in Erol et al.'s study may be considered a distinct factor compared to those expressed by fathers in this study. Moreover, it has been noted that the perception of fathers as limited emotional participants has changed recently, with the rise of the internet and social media playing a role in this shift (Wiradisuria et al., 2025).

Most participants prefer a permissive fathering style. Their responses indicate that fathers enjoy fatherhood. However, some express a desire to spend time with their children but are unable to do so adequately due to work commitments. A related study highlights expectations for fathers to be role models, teachers, and friends who share childcare responsibilities, while also bearing spousal responsibilities. These multiple demands can lead to identity conflicts and estrangement from themselves (Şenol & Erdem, 2018). Taken together, these findings suggest that the intensity of today's work life may limit fathers' ability to allocate sufficient time to these roles. Nevertheless, fathers value the time they spend with their children and report feeling happy during these moments.

The data also show that participants express opinions supporting more open discussions about fatherhood in society, raising awareness about children's perceptions of their fathers, and advocating for greater understanding toward fathers. When examining their statements, the messages they want to convey can be interpreted as emphasizing that children are valuable to society and that a child's condition reflects the family environment. It is important to love children and ensure they are not deprived of paternal affection. A good society is possible through raising good children. Children should be treated appropriately according to time and place. Related studies note that childhood has transformed due to local and global changes, that the institution of family has undergone rapid change following industrialization, and that society's perspective and perception of children have shifted (Atila, 2022). In an analysis of 100 advertisements, paternal love was the least represented value (Sezgin & Çifci, 2017). Teaching children positive role behaviors is important (Çiftçi, 1991), and there is a positive correlation between fathers' levels of affection and their involvement with their children (Ekici & Çalışandemir, 2021).

Özdeniz (2020) identified "showing attention and love" as a code representing the highest expectations from fathers. In this study, which includes the statements of eight participants, most emphasized the importance of expressing love toward children.

Conclusion

In conclusion, based on the participants' statements, it can be inferred that fathers perceive fatherhood as fulfilling their children's needs, showing affection and care, and valuing their children's opinions rather than making plans on their behalf. Their approaches to fatherhood have changed over time, and there is no complete consensus regarding helicopter parenting. Participants appear satisfied with their fatherhood experiences and view their children as an

essential part of society, believing that fathers play a significant and responsible role in raising this important societal component. The behaviors they express align with their perceptions of fatherhood. Some participants perceive contemporary fathers as more permissive, others as more attentive, while some believe the value of fatherhood has diminished due to the influence of social media. Participants express a desire for fatherhood to be better understood and discussed in society, emphasize the importance of fathers showing affection to their children, and advise prospective fathers to demonstrate care and affection toward their children.

Limitations of the Study

The data collected within the scope of this study are limited to eight fathers. The participants were restricted to fathers who have at least one child in late childhood. Another limitation is that some participants did not provide sufficiently detailed responses to certain questions, which could have deepened the qualitative analysis. While the limited number of participants (n=8) aligns with the nature of qualitative research, it also introduces certain constraints. The aim of qualitative research is not to generalize but to gain an in-depth understanding of individual experiences (Creswell, 2013). In this context, although the small sample size limits statistical representativeness, it is considered adequate for semantic representation and the generation of rich, detailed data (Patton, 2002). Additionally, data saturation was reached, as no new codes emerged. The selection of participants from various age groups and diverse socio-cultural backgrounds ensured that the codes reflected different perspectives, thereby enhancing the study's internal validity. Nevertheless, similar studies with larger participant groups from different regions could be conducted to compare themes.

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Appendix

Interview Questions
1. How old are you?
2. How many children do you have?
3. At what age did you become a father?
4. How old are your children currently?
5. How would you briefly describe your communication with your own father?
6. How would you describe yourself as a father?
7. What factors have most influenced your role as a father?
8. Has your perception of fatherhood changed over time? If so, how would you describe these changes?
9. How do you evaluate the current perception of fatherhood in society? What differences do you observe when compared to the past?
10. In your opinion, how do fathers today perceive the concept of fatherhood?
11. To what extent do you think fathers act in accordance with their perception of fatherhood?
12. Are there times when you experience thoughts or feelings that do not align with your adopted concept of fatherhood? If so, which do you tend to act in accordance with, and why?
13. How do you evaluate the quality of the time you spend with your children?
14. How would you define your parenting style (e.g., authoritarian, permissive)? What are the reasons behind choosing this particular style?
15. Helicopter parenting is defined as a style in which parents are overly involved with their children, live child-centered lives, organize and manage their children's schedules, and demonstrate perfectionistic tendencies. Considering this definition, what are your thoughts on helicopter parenting?
16. As a father who either adopts or does not adopt this style, could you share your personal experiences regarding helicopter parenting?
17. In your opinion, what could be the short- and long-term effects of helicopter parenting on children?
18. How do your relationships with other fathers (e.g., friends, family members) influence your own experience of fatherhood?
19. Are there any topics related to fatherhood that you believe should be discussed more in society? If so, what are they?
20. If you had the opportunity to send a message about fatherhood to future generations, what would it be?
21. Do you have any additional thoughts you would like to express? If so, what are they??

Milli Endüstriyel Eğitim Merkezi Projesi(1973-1977)

National Industrial Training Center Project (1973-1977)

Neslihan BOLAT BOZASLAN¹

Atıf:

Bolat Bozaslan, N. (2025). Milli Endüstriyel Eğitim Merkezi Projesi (1973–1977). *Disiplinlerarası Eğitim Araştırmaları Dergisi*, 9(21), 400–423. <https://doi.org/10.57135/jier.1714613>

Öz

19. yy'da sanayi devriminin başlamasıyla birlikte Dünya'da üretim biçimi değişmiştir. Üretim kollarında nitelikli eleman yetiştirme ihtiyacı bu dönemde başlamış olsa da asıl önemli II. Dünya savaşı sonrası ortaya çıkmıştır. Bu tarihten itibaren birçok ülke mesleki eğitime yönelik düzenlemeler yapma ihtiyacı duymuşlardır. Amerika, Japonya, İngiltere, Norveç vb. ülkeler bu konuda çeşitli yasal düzenlemeler yapmışlar, endüstriyel eğitime yönelik okullar açmışlardır. Özellikle 1960'lı yıllardan itibaren bu konuda girişimde bulunmuşlardır. Osmanlı Devletinde 19. yy'a kadar Ahi teşkilatında usta-çırak eğitimine dayalı bir mesleki eğitim yapılmıştır. Söz konusu yüzyıl itibarı ile kurulan fabrikalarda çalıştırılmak üzere çeşitli sanat ve zanaat okulları açılmıştır. Cumhuriyet döneminde ise yeni kurulan devletin öncelikli hedefi ekonomiyi iyileştirmek olduğundan daha Cumhuriyet ilan edilmeden İzmir İktisat kongresi toplanmış ve bu kongrede endüstrileşme için mesleki okulların önemine değinilmiştir. Bu amaçla Osmanlı'dan kalan sanat ve zanaat okullarının varlığı korunmuştur. 1928 yılında ülke çapında endüstriyel eğitim seferberliği başlatılmış, Avrupa'ya öğrenci gönderilmiştir. Tüm dünyada olduğu gibi ülkemizde de endüstriyel eğitime yönelik asıl girişimler 1960larda başlamıştır. 1960 yılında Meslekî ve Teknik Öğretim Etüd ve Programlama Dairesi başkanlığı, 1966'da Meslekî ve Teknik Yüksek Öğretim Genel Müdürlüğü, kurulmuştur. 1972 yılında Birleşmiş Milletlerin az gelişmiş ülkelerle ilgili başlattığı Birleşmiş Milletler Kalkınma Programı çerçevesinde Milli Endüstriyel Eğitim Merkezi Projesi(1973-1977) uygulanmaya konulmuştur. Bu program III. Beş Yıllık kalkınma Planı içerisinde yerini almıştır. Beş yıl sürmesi planlanan söz konusu programa göre İstanbul, Bursa, Adana ve Eskişehir gibi şehirlerde Endüstriyel eğitim merkezleri açılması öngörülmüştür.

Bu çalışmanın amacı bir kalkınma hamlesi olarak planlanmış olan Milli Endüstriyel Eğitim Merkezi Projesini arşiv kaynakları ışığında izah etmektir.

Anahtar Kelimeler: Mesleki Eğitim, Endüstriyel eğitim, Birleşmiş Milletler Kalkınma Programı, III. Beş Yıllık Kalkınma Planı

Abstrct

The mode of production in the world changed with the start of the industrial revolution in the 19th century. While the need to train qualified personnel in production branches started during this period, its real importance emerged after the Second World War. From this date onwards, many countries felt the need to make regulations for vocational education. Countries such as America, Japan, England, and Norway have made various legal regulations on this issue and opened schools for industrial education. They have especially taken initiatives on this issue since the 1960s. In the Ottoman Empire, until the 19th century, a vocational education based on master-apprentice training was carried out in the Ahi organization. As of the century in question, various art and craft schools were opened to employ people in the factories established.

In the Republican era, since the primary goal of the newly established state was to improve the economy, the İzmir Economics Congress was convened before the Republic was even declared, and the importance of vocational schools for industrialization was mentioned in this congress. For this purpose, the existence of art and craft schools remaining from the Ottoman Empire was preserved. In 1928, a nationwide industrial education mobilization was initiated, and students were sent to Europe. As in the rest of the world, substantial efforts toward industrial education in our country began in the 1960s. In 1960, the Vocational and Technical Education Research and Programming Department was established,

¹ Doç. Dr., Gaziantep Üniversitesi, Fen- Edebiyat Fakültesi, Gaziantep, Türkiye, e-posta: bolat@gantep.edu.tr. orcid.org/0000-0003-3345-356X

followed by the establishment of the General Directorate of Vocational and Technical Higher Education in 1966. In 1972, the National Industrial Education Center Project (1973-1977) was launched within the framework of the United Nations Development Program initiated for underdeveloped countries. This program took its place within the Third Five-Year Development Plan. According to the program, which was planned to last five years, the establishment of industrial education centers in cities such as Istanbul, Bursa, Adana, and Eskişehir was foreseen.

The aim of this study is to explain the National Industrial Education Center Project, which was planned as a development initiative, in light of archival sources.

Keywords: Vocational Education, Industrial Training, United Nations Development Programme, III. Five-Year Development Plan

GİRİŞ

Dünyada endüstriyel olarak iş gücünün planlanması II. Dünya Savaşı sonrasında yaygınlaşmıştır. Savaş sonunda ortaya çıkan ekonomik, sosyal ve teknolojik değişimler insan gücünün planlanmasını gerektirmiştir(İşler, 1997). İngiltere, Amerika, Japonya gibi birçok ülkede planlamalar yapılarak ara eleman eğitimi ile alakalı yasal düzenlemeler başlatılmıştır. Amerika'da Community Collage, Japonya'da üniversiteler, Junior Kolejler (Junior Colleges), ve Teknoloji Kolejleri (Colleges of Technology), Özel yetiştirme okulları (Special Training Schools) Norveç'de Bolgesel Meslek Yüksek Okulu Kurullarının (Boards of Regional Colleges) gibi kurumlar vasıtasıyla endüstriyel eğitim ihtiyacı karşılanmıştır(Başkan, 1999). İngiltere'de ise VVwhite Paper" adlı dosya ile 'Endüstriyel Eğitim ve Hükümet Teklifleri' hazırlanarak bu konuda yapılacaklar belirlenmiştir(Pamuk, 1996).

Ülkemizde mesleki eğitimin tarihini Ahi teşkilatına kadar götürebiliriz(Gemici, 2010). Anadolu'da Hacı Nasuriddin bin Mahmud ile başlayan usta-çırak ilişkisine dayalı bu süreç Osmanlı Devleti'nde 19. yy kadar devam etmiştir(Kızıler, 2015). Bu tarihten sonra modern fabrikaların kurulmaya başlaması ile mesleki eğitime yönelik okullar açılmaya başlanmıştır. Söz gelimi Mithat Paşa Niş valisi iken 1861 yılında Müslüman ve Hristiyan yetim çocuklara meslek edindirmek için *Islahhane* adını verdiği bir meslek okulu açmıştır. II. Abdülhamid döneminde ziraat mektebi, sanayi nefise gibi birçok sanat ve meslek okulu açılmıştır(Gündüz, 2008). Tekniker yetiştirmek üzere 1911 yılında açılan ilk kurum "Kondüktör Mektebi"dir(Henden&Tunç, 2005). Cumhuriyetin ilanından sonra da genel liselerin yanı sıra teknik liselerin açılması desteklenmiştir. I. Heyet-i İlmiye programında (1923)(Tanır&Aslan, 2019) mesleki ve teknik eğitim konusuna değinilmiştir. Yine İzmir iktisat kongresinde çıraklık okullarının açılması görüşülmüştür. 1927 yılında meslek ve sanat okulları Maarif vekâletine bağlanmış, 1928 yılında yurt genelinde mesleki eğitim seferberliği başlatılmıştır(Gemici, 2010). Bu amaçla kız ve erkek toplam 133 öğrenci Avrupa'ya gönderilmiştir. 1934-1936 eğitim öğretim yıllarında "Mesleki tedrisatın inkişafı Planı hazırlanmıştır. Mesleki eğitime yönelik düzenlemeler 1940 lı yıllarda da devam etmiş 1941 yılında Mesleki ve Teknik öğretim müsteşarlığı kurulmuştur(Ünlü, 2016).

Türkiye, ekonomik yönden kalkınmakta ve hızla sanayileşen bir ülke olmakla beraber 1960'lı yıllara kadar endüstri-ici, endüstriyel eğitim politikası saptanamamıştır. Türkiye'de endüstrinin bir endüstri içi eğitim politikasına duyduğu gereksinme ilk olarak 1960'larda ortaya çıkmıştır. Zira endüstriyel gelişme bu tarihten sonra kendini Türkiye de göstermeye başlamıştır. Endüstriyel gelişme hızlandıkça, endüstride değişen teknoloji için gereksinimi duyulan kalifiye insan gücü endüstri-ici endüstriyel eğitimi ön plana çıkarmış ve endüstriyel faaliyette bulunan işletmeler kendi içlerinde ferdi olarak bu gereksinmeyi karşılamaya başlamışlardır(Türkten, 1978). 1960 yılına gelindiğinde Meslekî ve Teknik Öğretim Etüd ve Programlama Dairesi Başkanlığı, 1966'da Meslekî ve Teknik Yüksek Öğretim Genel Müdürlüğü, kurulmuştur. 1973 yılında eğitim-öğretimin yeniden yapılandırılması sürecinde yükseköğretimde ön lisans kademesi getirilmiş ve ara insan gücü yetiştirmek üzere meslek yüksekokulları oluşturulmuştur (Resmî Gazete, 24. 6. 1973 - Sayı: 14574) Endüstriyel eğitim konusunda ara eleman yetiştirmek için Birleşmiş Milletler Kalkınma Programı çerçevesinde Milli Endüstriyel Eğitim Merkezi Projesi başlatılmıştır.

Araştırmanın Amacı

Bu çalışmanın amacı tarım dışı sektörlerde ara eleman ihtiyacını karşılamak için BKMP ve Türkiye işbirliğince hazırlanan “Milli Endüstriyel Eğitim Merkezi Projesi”ni Devlet Arşivleri Genel Müdürlüğünden alınan belgelerle izah etmektir.

YÖNTEM

Bu çalışma hazırlanırken tarih araştırmalarında kullanılan usul ve yöntemler kullanılmıştır. Bu kapsamda önce konu belirlenip sınırlandırılmıştır. Ardından konu ile alakalı telif eserler incelenmiştir. Son olarak konu ile alakalı arşiv araştırması yapılmıştır. Arşiv belgeleri ve telif eserler notlar alınarak incelenmiş ve alınan notlar konularına göre tasnif edilmiştir. Tasnif işlemi tamamlandıktan sonra yazma süreci başlamıştır.

BULGULAR

MİLLİ ENDÜSTRİYEL EĞİTİM MERKEZİ PROJESİ(1973-1977)

Ülkemizin yıldan yıla gelişmesi, sanayi alanında yatırımların artması nedeniyle bu alanda çalışacak nitelikli personele ihtiyaç duyulmuştur. Bu kapsamda tarım dışı sektörlerin uzman eleman ihtiyacını karşılamak amacıyla Üçüncü Beş Yıllık Kalkınma programında(<https://www.sbb.gov.tr/kalkinma-planlari/>) da ön görüldüğü üzere Birleşmiş Milletler Kalkınma Programının desteği ile Milli Endüstriyel Eğitim Merkezi Projesi 12 Haziran 1973 tarihinde onaylanmıştır(BCA, 30-18-1-2). Aslında program 1972 yılında hazırlanmış, Hükümetimiz ile BKMP arasında 30 Ocak 1973 tarihli Ankara’da yapılan antlaşmaya binaen 12 Haziran 1973 tarihinde kabul edilmiş ve 31 Temmuz 1973 Salı günü 14611 nolu Resmi gazetede yayınlanarak yürürlüğe girmiştir(<https://www.resmigazete.gov.tr/arsiv/14611.pdf>) Projenin kapağında şu bilgiler yer almaktadır(BCA, 300 - 48 - 18-1):

BİRLEŞMİŞ MİLLETLER KALKINMA PROGRAMI

TÜRK HÜKÜMETİNİN PROJESİ

ADI: Milli Endüstriyel Eğitim Projesi

SAYISI: TUR /71/536/B/01/11, SÜRESİ: İki yıl

SEKTÖRÜ: Endüstri, ALT SEKTÖRÜ: Endüstriyel Eğitim

HÜKÜMETİN İŞBİRLİĞİ YAPAN KURULUŞU: Milli Eğitim Bakanlığı

UYGULAYICI KURULUŞ: Uluslararası Çalışma Teşkilatı (ILO)

Sunulduğu tarih: 22 Eylül, 1972

Başlama tarihi: 1 Ocak, 1973

Hükümetin katkısı: 30.952.296 (Türk lirası)

BKMP'nın katkısı 591.400 (Amerikan doları)

Onandığı tarih: 30 Ocak 1973 hükümet adına (İmza)

Uygulayıcı kuruluş adına tarih: 30.1.1973 (İmza)

BKMP adına Tarih: 30.1.1973 (İmza)(BCA, 300 - 48 - 18-2).

Proje kitapçığının içindekiler kısmından anlaşılabacağı üzere proje dört bölüm ve bir ekten oluşmaktadır(BCA, 300 - 48 - 18-3).

I. Kısım: Bilgi birikimi ve destekleyici bilgi proje gereği

1. Projenin amacı ülkenin gittikçe artan nitelikli insan gücü ihtiyaçlarını karşılamak üzere bir Milli Endüstriyel Eğitim Projesini organize edip geliştirmesinde Hükümete yardımcı olmaktır.

2. Bu projenin gerekçesi 1973-1977 yıllarını kapsayan Üçüncü Beş Yıllık Kalkınma Planında ifadesini bulan Türk Kalkınma politikasıdır. (III. 5 Yıllık Kalkınma Planında “*sanayi tesisleri yalnız üretim kurumları değil, aynı zamanda eğitim ve öğretim kurumlarıdır*” ifadesiyle fabrika-içi eğitime dikkat çekilmiştir(Turan, 1996)). Plan aynı zamanda hem hayat standardını hızla yükseltecek ve hem de Türk ekonomisini dış kaynaklara olan bağımlılığını azaltarak Milli Gelir artışını amaçlamaktadır.

3. Üçüncü Beş Yıllık Kalkınma Planında öngörülen hızlı endüstriyel kalkınma sonucunda ortaya çıkacak nitelikli insan gücü talebini karşılamakta ön görülen güçlükler, (a) endüstri ve ekonominin ihtiyaçlarına uygun olarak endüstriyel eğitimin geliştirilmesini, (b) uygun eğitim programlarının hazırlanmasını ve (c) mevcut eğitim programlarının uygulanmasında işbirliği ve koordinasyonun sağlanmasını gerektirecektir.

Bilgi Birikimi

(*)(Bu dokümanın Kısımındaki 1 den 6 ya kadar tablolarda kullanılan istatistiki rakamlar geçici olarak kabul edilmeli ve Üçüncü Beş Yıllık Planın nihai şekliyle yayımlanmasından sonra gereken düzeltmeler yapılmalıdır.)

4. Proje, Hükümetin ikisi İstanbul'da ve diğerleri Eskişehir, Bursa, İzmir ve Adana'da olmak üzere inşa edeceği toplam altı İstihdam Öncesi Eğitim Merkezine yardım sağlayacaktır. Bu Merkezler için gerekli teçhizat Uluslararası İmar ve Kalkınma Bankası'na (IBRD) yapılacak istikrazdan sağlanacaktır. Altı Merkezin tahmini maliyeti 52.416.000TL., Hükümet katkısı ve 19.784.000 TL. IBRD istikrazı olmak üzere toplam 72.200.000 TL. dir.

5. Mahalli endüstrinin ihtiyaçlarını karşılamak amacıyla gerekli binalar temin edilir edilmez bu merkezlerde bir meslek-öncesi eğitim programı başlatılacaktır.

Nüfus:

6. En son 1970 yılında yapılan nüfus sayımına göre Türkiye'nin nüfusu 36.666.549'dur. Tablo 1 verilerine göre nüfus yılda ortalama olarak % 2,6 oranında artmaktadır.

7. Nüfusun yüzde otuz beşi nüfusu 10.000'in üstünde olan şehirlerde, yüzde altmış beşi ise kırsal bölgelerde yaşamaktadır. Her geçen yıl şehirde oturan nüfus oranında bir artış olmaktadır. Endüstrileşmenin artması ile birlikte köyden kente göç artmaktadır.

Tablo 1. Nüfusun Yaş Gruplarına Göre Dağılımı(BCA, 300 - 48 - 18-4).

Yıl	Faal Nüfus	Faal Olmayan nüfus	
	15 ile 64 yaşları	15 yaşın altındakiler	64 yaşın üstü
1955	% 57.05	% 39.37	% 3.58
1960	% 55.22	% 41.25	% 3.53
1965	% 54.16	% 41.74	% 4.10
1970	% 54.18	% 41.51	% 4.37

Türkiye'deki nüfus artış hızı istihdam sorunlarını da beraberinde getirmektedir. Çünkü artan nüfus işgücü arzını artırır. Sağlanan istihdam olanakları işgücü arzını karşılayamadığı durumlarda tarım sahasında çalışanların sayısında artış olur. Başka bir deyimle gizli işsizlik baş gösterir ve giderek tarım-dışı sektörde açık işsizlik şeklinde görülür.

Tablo 2. İstihdamın Sektörlere Göre Dağılımı (Silahlı Kuvvetler hariç)
Yaş grubu 15-64 (erkek ve kadın)

	% 1962	% 1967	% 1971	% 1972
Tarım	77.1	71.3	66.1	65.0
Endüstri	8.3	9.2	10.9	11.3
İnşaat	2.6	2.9	3.1	3.2
Ticaret	2.7	3.1	4.4	4.5
Ulaştırma	2.2	2.5	3.2	3.3
Hizmetler	6.4	8.3	11.3	11.7
Diğerleri	0.7	2.7	1.0	1.0
TOPLAM:	100.0	100.0	100.0	100.0

Yukarıdaki tablo 2'ye göre 1962-1972 yılları arasında endüstri ve hizmet sektörlerinde çalıştırılanların oranı sürekli artmıştır.

8. 1962-1972 yılları arasındaki devrede şehir nüfustaki yıllık artış oranı yüzde de 5.15 olmuştur ki bu da yıllık nüfus artışının üstünde bir artıştır. Bu artışın nedeni doğumlarla ölümler arasındaki farktan ziyade köyden şehre göçe bağlıdır.

9. Aynı yönde gelişmekte olan şehirleşme ve endüstrileşme hareketleri Türkiye'nin sosyal yapısının hızla değişmekte olduğunu göstermektedir. Bu açıdan bakıldığında şehirleşme Türkiye için olumlu bir hareket olarak kabul edilebilir. Şehirsel merkezlerin gelişmesi özellikle nüfusları 20.000'in üstünde olan şehirlerin sayısının arttığını göstermektedir(BCA, 300 - 48 - 18-5).

Ekonomik bilgi:

Projenin ekonomik gerekçeleri izah edilmiştir.

10. Üçüncü Beş Yıllık Kalkınma Planının esas amacı Türk ekonomisinin gelişimini hızlandırıp, bu gelişimi sürdürülebilir kılmaktır. Bu planın uygulama süresince GSMH 'da %68,5'lik bir artış beklenmekte ve ekonominin yıllık ortalama gelişme hızı %7,8 olarak tahmin edilmektedir. Fakat nüfus artışındaki hız dikkate alındığı takdirde bu ortalama yıllık % 7,8 artış, GSMH 'da kişi başına %4,4 lük bir artış olarak gerçekleşecektir.

11. Bu kalkınmada endüstri sektörü önemli rol oynayacaktır. Endüstrinin GSMH 'da ki payı 1967 yılında %16,3 iken 1972 de % 25,0'e ve 1977 de %27,0'e yükselmesi beklenmektedir. Bu artışı gerçekleştirmek amaç genel olarak istihdam olanaklarını genişletmek ve tarım sektöründeki fazla insan gücünün bu sektör dışındaki faaliyetlere sevkettir. Ayrıca eğitilmiş insan gücünü daha etkin bir şekilde değerlendirmek ve endüstriyel faaliyet hızını daha da arttırmak zorunluluktur.

Tablo 3. Tarım-dışı Sektörlerde İstihdamın Gelişmesi Yaş Gurubu 15-64 (erkek ve kadın)

Sektörler	1962	1967	1971	1972 (*)
Endüstri	995	1.175	1.450	1.519
İnşaat	305	369	419	433
Ticaret	328	395	581	605
Ulaştırma	258	325	420	450
Hizmetler**				
Toplam	2.654	3.321	4.364	4.586

*Hesaplamalar nüfus artış hedeflerine göre yapılmıştır.

**Banka ve Sigorta işçileri Hizmetler sektörüne dâhildir.

12. III. Beş yıllık kalkınma planında hızlı ekonomik kalkınmanın iş-gücü yapısında önemli değişiklikler yapılmasını ön görmektedir. Bunun sonucu olarak iş kategorilerinin yeniden

dağılımının yapılması yanında kalifiye işçi sayısında oldukça büyük bir artış gerekecektir. Gerek eğitim ve gerekse endüstri alanında (Özellikle imalat ve hizmet endüstrilerinde) personelin seviyesinin yükseltilmesi amacıyla özel bir çaba harcanmalıdır(BCA, 300 - 48 – 18-6).

İstihdam:

13. III. Beş yıllık plan döneminde endüstrileşmeye ağırlık vermek suretiyle şehirlerde daha fazla iş imkânı oluşturulacaktır. Ekonominin % 7, 8 oranında hızlı büyümesi ve daha fazla iş imkânı sağlamak amacıyla çeşitli tedbirler alınarak desteklenecek ve özellikle işsizliğin yoğun olduğu bölgelerde özel çaba sarf edilecektir.

Tablo 4. Tarım-dışı Sektördeki İstihdamla ilgili tahminler (Üçüncü Beş Yıllık Plan Devresinde) (Yaş grubu 15-64 (erkek ve kadın)(Bin olarak)

Sektör	1972	1977	1982	1987	1995
Endüstri	1.519	2.012			
İnşaat	433	683			
Ticaret	605	726			
Ulaştırma	450	615			
Hizmetler	1.579	2.072			
Toplam:	4.586	6.197			

1972-1977 yılları arasında artması ön görülen istihdam sahaları ve çalışan kişi sayısı

14. Aşağıda 5. tabloda tarım-dışı sektörlerdeki işsizlik oranları ve 1968-1972 döneminde insan gücü, arz ve talep durumu gösterilmiştir.

Tablo 5. Tarım-dışı sektörlerde insan gücü arz ve talebi ve işsizlik (1968-1972) Bin olarak

	1968	1969	1970	1971	1972
Arz	4,449	4,730	5,037	5,369	5,729
Talep	4,049	4,317	4,607	4,920	5,259
İşsizlik	400	413	439	448	470
İşsizlik Yüzdesi	% 9.0	% 8.7	% 8.5	% 8.3	% 8.2

15. Devlet Planlama Teşkilatının teknik daireleri insan gücü ihtiyaçları ile ilgili olarak belli başlı ekonomik sektörlerde ve çeşitli vasıf seviyelerinde detaylı bir çalışma yapmış bulunmaktadır. İhtiyaçlarla ilgili projeksiyon 1992 yılına kadar uzatılmıştır. Çünkü mesleki eğitim tesislerinin geliştirilmesi ile iş piyasasının ihtiyacı olan uzman personelin yetiştirilmesi için uzun zamana ihtiyaç vardır.

16. III. Beş Yıllık Kalkınma Planında insan gücü ihtiyaçlarını planlarken esas alınan ölçüt sektörlerin bu dönemde tahmini büyüme hedefleriydi. İnsan gücü planlamasında kullanılan yöntem 1955, 1960 ve 1965 yılları için istihdamın iş dökümü ile sektörel çıktı arasında(BCA, 300 - 48 – 18-7) bir ilişki kurmayı gerektirmektedir. İnsan gücü ihtiyaçları ile ilgili planlamalar 1955, 1960 ve 1965 yılları için esneklik oranları esasına göre yapılmış ve geleceğe ait istihdam seviyeleri bu üç yılın düzeltilmiş esneklik oranlarına göre saptanmıştı. Ayrıca planlamalar işçilerin tutum ve değer yargılarına göre ve yatırım kalifiye insan gücü oranlarına göre tadil edilmişti. Bunlar memleket çapında gerçekleştirilen üç etüdün neticesi olarak değerlendirilmişti. Tablo 6 sanatkâr seviyesinde yapılan çalışmaların sonucunu vermektedir.

17.

Tablo 6. İnsan gücü ihtiyaçları (1972-1992) Bin olarak) (Kalifiye İşçi Talebi)

Kalifiye İşçi Talebi	1972	1977	1992
1. Çelik ve Döküm İşçi Talebi	36,0	62,0	242,0
2. Makine	371,0	543,0	2.346,0
3. Elektrik	132,0	205,0	873,0
4. İnşaat	176,0	260,0	919,0
5. Diğerleri	1.044,0	1.208,0	4.916,0
TOPLAM:	1.759,0	2.278,0	9.296,0

Kurumsal Çerçeve:

18. Türk Hükümeti, Projenin organizasyonu ve uygulamasıyla ilgili bütün sorumluluğun BMKP'nca uygulayıcı kurulu olarak görevlendirilen ve uygulayıcı kuruluş tarafından Hükümetle görüşülerek tayin olunacak proje yöneticisi aracılığı ile uygulamaları planlayıp idare edecek olan ILO'ya ait olduğunu kabul etmektedir.

19. Hükümetin işbirliği için sorumlu kurulu; Milli Eğitim Bakanlığı olacaktır.

20. Proje bir idare meclisince yönetilecek ve bu idare meclisi projenin amaç ve yükümlülüklerinin gerçekleştirilmesinden sorumludur.

21. İdare Meclisi proje amaçlarına uygun olarak proje politikasını saptamakta tam yetkili olacak, projenin gayesine erişmesi için gerekli tedbirleri alacak ilgili Bakanlıklarla sanayi kuruluşları arasında yakın bir işbirliği ve koordinasyonu sağlayacaktır. İdare Meclisi, Proje Dokümanının imzalanıp uygulanmasına geçildikten sonra hazırlanacak talimatnameye göre faaliyet gösterecektir.

22. İdare Meclisi, Milli Eğitim Bakanlığı Mesleki ve Teknik Öğretim Müsteşarının veya onun temsilcisinin Başkanlığında aşağıdaki Bakanlık ve Kuruluşların yüksek seviyedeki birer temsilcisinden oluşacaktır. Devlet Planlama Teşkilatı; Milli Eğitim Bakanlığı; Çalışma Bakanlığı; Sanayi ve Teknoloji Bakanlığı; Türk İş; Türk İşverenler Konfederasyonu; Ticaret Odaları Birliği; Türk Esnaf ve Sanatkarlar Konfederasyonu; Milli Produktivite Merkezi. Her meclis üyesinin bir tek oy hakkı olacaktır. Oy hakları değiştirilmemek şartıyla İdare Meclisi Toplantılarına her kuruluştan birden fazla temsilci katılabilir.

23. Proje Müdürü ve Türk Eş Müdürü, İdare Meclisi toplantılarına katılacaklar fakat oy kullanma hakkına sahip olmayacaklardır. Bunlar üyeleri proje hakkında tavsiye ve görüşlerini bildirip bütün gerekli bilgiyi verirler. BMKP'nın Daimi Temsilcisi bir danışman sıfatıyla İdare Meclisi toplantılarına davet edilir fakat oy kullanmaz. İdare Meclisince onanan diğer kamu veya özel sektör kuruluşlarının yetkili temsilcileri toplantılara davet olunabilir.

24. Proje faaliyetleri; başta özellikle Mühendislerin Fabrika içi üretimi (TUR/68/529) ve İş Güvenliği ve Sağlığı (TUR/67/518) projeleri olmak üzere, ikili ve çok tarafı kaynaklarca sağlanan yardımı tamamlayacaktır(BCA, 300 - 48 - 18-8).

25. Ankara Mesleki Eğitim Merkezinin bina ve tesisleri iyi bir şekilde teçhiz ve tefriş edilerek projenin uygulanacağı Endüstriyel Eğitimi Geliştirme Merkezince kullanılmak üzere tahsis olunacaktır.

26. Milli Endüstriyel Eğitim Projesi, İdare Meclisinin tavsiyesi üzerine, Milli Eğitim Bakanlığı Bütçesine konacak tahsisatla yürütülecektir.

27. Bu projenin uygulanması Üçüncü Beş Yıllık Planda belirtilen ilke ve kurum- sal gelişmelere uygun bir şekilde yapılacaktır.

Mevcut Mesleki Eğitim Tesisleri

28. Özellikle Milli Eğitim, Çalışma ve Sanayi Bakanlıkları olmak üzere bazı kamu ve özel teşebbüsler endüstri için çeşitli mesleki eğitim sistemleri tesis etmişlerdir: sanat okulları, gece kursları ve fabrika-içi eğitim programları gibi.

Ankara Mesleki Eğitim Merkezi

29. 1963 yılında başlatılan monitör eğitim kurslarının gayesi istihdam edilmiş olan formenlere bilgi, öğretim, kılavuzluk ve maharet geliştirme sağlamak suretiyle onların eğitim kursu sonunda kendi fabrikalarında yetenekli birer formen-eğitici olarak yetiştirilmelerini gerçekleştirmek idi. Endüstriyel kuruluşlar arasında monitör eğitimi programlarına karşı olumlu bir tepki bulunmaktadır.

30. Monitör eğitim programının belli başlı mahzurları maharet geliştirme için kolaylıkların yokluğu ve Merkezde pratik eğitim durumunun yokluğudur. Ancak bazı temel sanatlar (tornacılık, frezecilik, elektrik tesisatçılığı, elektrik ve oksijen kaynakçılığı gibi) için eğitim atölyeleri teçhiz edilmiş olup bu dallarda eğitim 1969 yılında başlamıştır. Ayrıca kapasiteyi 300 öğrenciye ve yıllık mezun sayısını 1000 e çıkacak şekilde Merkezi genişletmek için planlar mevcuttur.

Eğitim İhtiyaçları

31. Üçüncü Beş Yıllık Kalkınma Planının sektör büyüme hedeflerine göre saptanmış gelecekteki insan gücü ihtiyaçları ile mevcut resmi ve gayri-resmi eğitim kapasitesi esasına göre işgücü arzı ile ilgili tahminler arasında bir kıyaslama insan gücü arzında büyük açıklar olduğunu göstermektedir.

32. Türkiye'deki mevcut eğitim sistemleri, gerek nicelik ve gerekse nitelik bakımından ihtiyaçları karşılayamamaktadır. Her ne kadar sanat okullarındaki eğitim programlarını ıslah etmek için bir teşebbüs yapılmakta ise de buralarda eğitileceklerin sayısı yukarıda bahsi geçen insan gücü açıklarına kıyasla çok azdır. Buna ek olarak işçiler yalnız bir okul havası içerisinde eğitilmişler ise fabrika şartlarına kendilerini adapte etmekte güçlük çekmektedirler. Bu nedenle, tercihan bir fabrikada eğitilmeleri tercihe şayandır. İşçiler, işyeri teçhizat ve kolaylıklarından faydalanılarak eğitilmişlerse daha çabuk bir şekilde verimli neticeler hâsıl olur. Gayri-resmi eğitim ayrıca gerek kapasitenin ve gerekse müfredatın ihtiyaçlara göre ayarlanmasına imkân vermesi bakımından daha esnekler. Böylece Üçüncü Beş Yıllık Kalkınma Planında gayri resmi eğitimin iş dallarında lüzumlu temel eğitimi sağlayacak bir şekilde organize edilmesine ağırlık verilmektedir.

33. Gerek kamu ve gerekse özel sektörlerdeki fabrika-içi eğitim programlarının çoğunda profesyonel sanat eğitim ekspertizine ihtiyaç vardır. Bunlar sağlandığı takdirde eğitim için daha az bir zamana ihtiyaç olacağı gibi maharet geliştirme sürati daha da artırılacaktır. Programların öğretim ile ilgili saf- hasının geliştirilmesine özel bir dikkat sarf etmelidir. Eğitimi detaylı planlama çerçevesi dâhilinde organize etmek ve ekonomik kalkınmaya katkıda bulunması(BCA, 300 - 48 - 18-9) amacı ile gayri-resmi eğitim sağlayan bütün kuruluşlar birbirleri arasında yakın bir münasebet kurmalıdırlar.

34. Ayrıca organize milli uygulamaları ve çeşitli sanat dallarındaki eğitim ihtiyaçlarının tespitine, mesleki rehberliğe, eğitim standartlarının ve sanat testlerinin geliştirilmesine, sanat sertifikasının ihdasına, eğitim maliyetlerinin analizinin yapılmasına, eğitim görevlerinin durumlarının takip edilmesine, eğitimin etkililiğinin değerlendirilmesine v.s.ve ihtiyaç vardır. Eğitim konularında Endüstri, Çalışma ve Eğitim Bakanlıkları arasında daha iyi bir işbirliğine ihtiyaç vardır.

Gelecekte BMKP Yardımı

35. Bu dokümanda tanımı yapılan Hükümet yükümlülüklerinin projenin amaçlarının gerçekleştirilmesi bakımından özel bir önemi olup, BMKP'nın bu projeye iştirake devamı bu yükümlülüklerin zamanında yerine getirilmesine bağlı olacaktır.

II. Kısım Projenin Amaçları

1. Milli Endüstriyel Eğitim Projesinin başladığı tarihte Türkiye için bir BMKP ülke programı onanmış değildi, fakat bu proje için tahsisat şimdi programa dâhil edilmiş bulunmaktadır.

A. Uzun Vadedeki Amaçlar

2. Projenin uzun vadedeki amacı Türkiye'nin kalkınma planlarında öngörülen hızlı ekonomik gelişme neticesi meydana gelecek insan gücü açığını kapatmak amacıyla bir Milli Endüstriyel Eğitim Projesi tesis etmesinde Hükümete yardımcı olmaktır.

B. Müstacel Amaçlar

3. Eğitim, Çalışma ve Endüstri Bakanlıklarınca ve özel kuruluşlarca yürütülen endüstriyel eğitim programlarının tetkiki.

4. Fabrika-ıçi eğitim ve çırak eğitimi konularını kapsayan sistemlerin hazırlanış ve uygulanışında tavsiyelerde bulunmak.

5.(a) İş piyasasının analizini yapıp ülkenin çeşitli sanat dallarında kalifiye teknik eleman ihtiyaçlarını tesbit edecek,

(b) Endüstrinin ihtiyaçlarını karşılamak üzere programlar geliştirecek, (c) sanat sertifikası faaliyetleri ilgili olarak eğitim standartları ve sanat testleri ihdas edecek olan bir Milli Endüstriyel Eğitim Merkezin geliştirmek.

6. Teorik ve teknik konularda, atölye tatbikatı ve modern öğretim dallarında öğretmenlerin eğitilmesi. Bu öğretmenlere fabrika-ıçi eğitim programlarında olduğu kadar aşağıda belirtilen endüstri bölgelerinde kurulacak altı mesleki eğitim merkezinde de ihtiyaç vardır. IBRD istikraz yardımı ile kurulacak bu merkezlerin yerleri şöyledir: Eskişehir (bir); İstanbul (iki); Bursa (bir); İzmir (bir); Adana (bir).

7. Çeşitli Bakanlıklar ve özel kuruluşlarca tertiplenen mevcut endüstriyel eğitim programlarının değerlendirilmesi ve geliştirilmesi.

8. Projece geliştirilecek ilkeler ve programlar çerçevesinde faaliyet gösterecek istihdam-öncesi ve diğer bütün mesleki eğitim merkezlerinin geliştirilmesinde müşavirlik hizmetleri, tavsiye ve faal iştiraki temin etmek. Yukarıdakilere altı tane IBRD istihdam-öncesi merkezi de dâhil edilecektir(BCA, 300 - 48 – 18-10).

Yatırım Potansiyeli:

Bu proje, yatırım potansiyeline sahip olabilir ve bu hususun özel bir incelemesi konsültan tarafından proje faaliyetlerinin bir parçası olarak yürütülecektir.

III. Kısım Çalışma Planı

Proje Faaliyetlerinin Tanımı

Uygulama öncesi faaliyetler devresinde müteakip arazideki proje uygulamalarının 1 Ocak, 1973 tarihinde başlayıp takriben 31 Aralık, 1974 gününe kadar sürmesi planlanmaktadır.

Proje Faaliyeti	Yeri	Tasarlanan Süre ve Başlama Tarihi
1. Eğitim, Çalışma ve Endüstri Bakanlıklarınca ve özel kuruluşlarca tertiplenen endüstriyel eğitim programlarının tetkiki.	Ankara ve Belli başlı endüstriyel merkezler.	Proje süresi ve uygulama öncesi devre Ekim, 1972 de başlayacaktır.
2. Fabrika-ıçi eğitim ve cıarak eğitimini kapsayan sistemlerin hazırlanış ve uygulanış ile ilgili olarak tavsiyelerde bulunulacak.	Ankara-Eğitim ve Endüstri Bakanlıkları	15 ay: Nisan 1973 den Haziran 1974 e kadar.
3. Bir Milli Endüstriyel Eğitim Geliştirme Merkezinin geliştirilmesi	Ankara Çalışma Bakanlığı	16 ay: Ocak 1973 den Nisan 1974 e kadar.
4. Ülkenin çeşitli sanat kollarında- ki eğitilmiş teknik eleman ihtiyaçlarının tesbiti.	Ankara Çalışma Bakanlığı	16 ay: Ocak 1973 den Nisan 1974 e kadar
5. Endüstrinin ihtiyaçlarını karşılayacak programların geliştirilmesi.	Ankara Endüstriyel Eğitimi Geliştirme Merkezi	Ocak 1973 den itibaren devamlı
6. Eğitim standartları ile sanat testlerinin ihdası	Yukarıdaki aynı	Ocak 1973 den itibaren devamlı
7. Fabrika-ıçi eğitim ile altı IBRD ve diğer endüstriyel eğitim merkezlerinin ihtiyacı olan eğitimcilerin teori ve atelye tatbikatı ve modern eğitim metotları konularında eğitilmesi	Ankara M.E.E.G.M.	15 ay: Nisan 1973 den Haziran 1974 e kadar.
8. Altı IBRD Merkezi ile ilgili olarak disayn, vaziyet planı ve teçhizat ile ilgili yardım.	Ankara Eğitim Bakanlığı	Uygulama-öncesi faaliyet ve projenin iki yıllık devresinde ihtiyaç hâsıl oldukça (BCA, 300 - 48 – 18-11)
9. Bir Mesleki Rehber Merkezinin kuruluşu ile ilgili olarak yardım	Ankara M.E.E.G.M. Eğ.ve Çal.Bak.	Müşavirlik süresi saptanacak.
10. Altı IBRD Merkezi için Eğitim kurslarının organizasyonunda ve kurs programları ile öğretim malzemelerinin hazırlanışında yardım sağlama.	Ankara-İstanbul Eskişehir	21 ay: Nisan 1973 den Aralık 1974 e kadar
11. Çeşitli Bakanlıklar ve özel kuruluşlarca tertiplenen mevcut endüstriyel eğitim programlarının değerlendirilme- si ve koordinasyonu	Bursa İzmir Ankara ve belli-başlı endüstri merkezleri	Devamlı takip gerektiğinden Ocak, 1973 den itibaren projenin iki yıllık süresi boyunca.
12. Kontrpart personelin eğitimi	Ankara	1 Ocak, 1973 den proje süresince devam edecek.

BMKP Girdilerinin Tanımı

Uluslararası Personelin Tayini

13. Proje Menajeri

Görevlerinin ifasında proje Menajeri gereği halinde Milli Eğitim Bakanlığı ile istişarelerde bulunarak

(a) Aralarında çeşitli uygulamaların zamanının ve bütçesinin tesbiti ve teknik raporların hazırlanması da dahil projenin detaylı planlama ve tatbikatından sorumlu olacak;

(b) Proje kontrpart personeli ile yardımcı personelin seçimi ile normal olarak kontrpart proje personeli arasından BMKP fonlu burslar için aday seçiminde yardımcı olacak;

- (c) Uzmanlar ve teknik konularda projeye tayin olunan kontrpart personele nezaret edecek;
- (d) Eğitim standartlarını saptayıp kontrpart personelin Türkiye'deki eğitimine nezaret edecek.
- (e) Bir milli mesleki eğitim projesinin inşası için gerekli hazırlık çalışmalarında Hükümete yardımcı olacak;
- (f) Bütün malzeme, teçhizat ve taşıt araçları ile ILO kanalıyla proje için temin olunan paraların mahalli olarak harcanmasında ILO'ya karşı sorumlu olacak;
- (g) Gerek BHKP'ne ait ve gerekse Hükümetçe projeye verilmiş veya tahsis olunmuş arazi, bina, teçhizat ve malzemelerle diğer mülkün kullanılmasını kontrol edecek;
- (h) Şayan'ı arzu olduğu kanaati hâsıl olduğu takdirde bu proje ile ilişkisi olan diğer kuruluş veya proje personelinin çabalarını koordine edecek;
- (i) Bir mesleki eğitim uzmanı olarak ve özellikle eğitmen eğitiminden sorumlu bir kimse olarak kendi ehliyet sahasına dahil diğer hususlarda herhangi bir görevi ifa edecektir (BCA, 300 - 48 - 18-12).

Aranılan Vasıflar:

- (j) Mühendislik dallarında bir veya birden fazlasında iyi bir genel ve teknik öğrenim;
- (k) Sağlam ve pratik bir eğitimi müteakip endüstri alanında tecrübe ve sorumlu bir mevkii deruhte etmiş olma;
- (l) Program geliştirme ve değişik sanat dallarında ve değişik seviyede endüstri işçilerinin eğitimi için kaynakların organizasyonunda geniş tecrübe sahibi olma;
- (m) Bir ekip havası içerisinde diğerlerinin faaliyetlerini planlama-organize ve kontrol etme yeteneğine sahip olma;
- (n) Yukarıda belirtilen görevleri ifa edebilme kabiliyeti.

14. Eğitim Standartları ve Değerlendirme dalında Uzman: Uzman, eğitim standartları, sanat testleri ve sanat sertifika usullerini geliştirecek, sanat ve endüstriyel kuruluşlardaki iş muhtevasının tahlilini yapıp ilgili sanat dalının maharet ihtiyaçlarını karşılayacak eğitim standardı şeklini saptayacak, ekibin diğer uzmanları ile işbirliği halinde prototip sanat testlerini planlayacaktır. Uzman takriben 1 Nisan, 1973 de 15 aylık bir süre için gelecektir.

15. İş Piyasası Analizi dağında Uzman: Ülkenin ihtiyacını duyduğu eğitilmiş teknik personeli sağlama çabalarını engelleyen problemleri teşhis etmek gayesiyle Uzman, eğitilmiş personelin arz ve talebini etkileyen iş piyasasındaki faktörlerin analizini yapacak, Türkiye'de ihtiyacı duyulan eğitilmiş teknik personelin sağlanmasına yardım edecek, alınması mümkün politika tedbirlerini tavsiye edecektir. Uzman takriben 10 Ocak, 1973 de 16 aylık bir süre için gelecektir.

16. Çıraklık ve Fabrika-içi Eğitim dalında Uzman: Uzman endüstride uygulanan bütün çıraklık ve fabrika-içi eğitim projelerini teşvik edip geliştirecek ve nezaret edecek ve bunları projenin programı dâhilindeki diğer eğitim faaliyetleri ile koordine edecek, çıraklık ve fabrika-içi eğitime ile ilgili olarak Endüstriyel Eğitim Kanununun uygulanmasını detaylı bir şekilde kapsayacak kaide ve nizamnameleri gereği halinde kaleme alacak, ekipteki diğer uzmanlarla işbirliği yaparak çırak çalıştıran sanatlarla yetişkinlerin fabrika-içi eğitiminde kullanılmak üzere müfredat programlarıyla diğer eğitim malzemelerini formüle edecektir. Uzman takriben 1 Nisan, 1973 tarihinde 15 aylık bir süre için gelecektir.

17. Öğretim Teknikleri dalında Uzman: Uzman, konu ile ilgili gerekli teorik bilgi ile birlikte öğretim tekniklerinin endüstriyel sanat maharetlerine tatbikini teşvik edip geliştirecek ve nezaret edecek, proje programına dâhil diğer eğitim faaliyetleri ile bu çalışmayı koordine edecek, mevcut ve müstakbel eğitmenlere ve bu sorumlulukla yükümlü nezaretçilere modern öğretim metotlarını gösterecek ve özellikle onların eğitim araç ve gereçlerinden nasıl faydalanacakları hususunda rehberlik ve tavsiye görevlerini yerine getirecektir. Uzman takriben 1 Nisan, 1973 de 15 aylık bir süre için gelecektir.

18. Motor Mekaniği dalında Uzman: Uzman, Projenin gerek okul-ıçı ve gerekse fabrika-ıçı motor mekaniği eğitimi faaliyetlerine nezaret edip bunları proje dâhilindeki diğer maharet dallarındaki eğitim ile koordine edecek, kendisinden hizmet etmesi istenilebilecek herhangi bir milli danışma kurulu veya sanat komitesi ile birlikte çalışarak endüstri sektörünün motor mekaniği (benzin, dizel ve elektrik) dalını kapsayan; gerek mevcut ve gerekse öngörülen iş modellerini tetkik edecek ve buradan istenilen eğitime rehber olacak çeşitli düzeylerdeki meslekler için iş profillerini saptayacaktır. Uzman takriben 1 Mayıs, 1973 de 15 aylık bir süre için gelecektir(BCA, 300 - 48 – 18-13).

19. Teçhizat Planlama, Tedarik ve Sevk ve İdare Etme Dalında Uzman: Uzman, programın teçhizat planlama, tedarik ve sevk ve idare faaliyetlerine nezaret edip bunları projenin diğer faaliyetleriyle koordine edecek, Uluslararası İmar ve Kalkınma Bankası (IBRD) yardımı ile kurulacak, eğitim merkezlerinin mutasavver rollerini, öğretilecek maharetlerin tipleri ve seviyeleri bakımından tetkik edip bundan bu maksatla gerekli teçhizatın en uygun miktar ve kategorisini saptayacaktır. Bu tetkik bu projede görevlendirilen uluslararası ekibin diğer üyeleriyle beraber çalışılarak ve gerekse ülkede mesleki eğitim konusu ile ilgilenen herhangi bir milli danışma kurulu veya sanat komitesi ile işbirliği yaparak gerçekleştirilmelidir. Uzman takriben 1 Ocak, 1973 tarihinde 12 aylık bir süre için gelecektir.

20. Elektronik dalında Uzman: Uzman, projenin gerek okul-ıçı ve gerekse fabrika-ıçı elektronik eğitim faaliyetlerine nezaret edip bunları proje dâhilindeki diğer maharet dallarındaki eğitim ile koordine edecek, kendisinden hizmet etmesi istenebilecek herhangi bir milli danışma kurulu veya sanat komitesi ile birlikte çalışarak aralarında radyo ve televizyon bakım ve tamiri de dâhil olmak üzere endüstrinin uygulamalı elektronik sektörünü kapsayan gerek mevcut ve gerekse öngörülen iş modellerini tetkik edecek ve bundan istenilen eğitime rehber olacak çeşitli düzeylerdeki meslekler için iş profillerini saptayacaktır. Uzman takriben 1 Mayıs, 1973 de 15 aylık bir süre için gelecektir.

21. Alet ve Kalıp Yapma dalında Uzman: Uzman, projenin gerek okul-ıçı ve gerekse fabrika içi alet ve kalıp yapma ve makina atölyesi eğitim faaliyetlerine nezaret edip bunları proje dâhilindeki diğer maharet dallarındaki eğitim ile koordine edecek, kendisinden hizmet etmesi istenilebilecek herhangi bir milli danışma kurulu veya sanat komitesi ile birlikte çalışarak endüstri sektörlerinin ve kalın yapma ve makina atölyesi tatbikatını kapsayan gerek mevcut ve gerekse öngörülen iş modellerini tetkik edecek ve bundan istenilen eğitime rehber olacak çeşitli düzeylerdeki meslekler için iş profillerini saptayacaktır. Uzman yaklaşık 1 Ocak 1973 tarihinde 15 aylık bir süre için gelecektir.

22. Dökümcülük İşleri Dalında Uzman: Uzman, projenin gerek okul-ıçı ve gerekse fabrika-ıçı dökümcülük işleri ile ilgili eğitim faaliyetlerine nezaret edip bunları proje dâhilindeki diğer maharet dallarındaki eğitim ile koordine edecek, kendisinden hizmet etmesi istenilebilecek herhangi bir milli danışma kurulu veya sanat komitesi ile birlikte çalışarak endüstrinin dökümcülük işleri sektörünü kapsayan gerek mevcut ve gerekse öngörülen iş modellerini tetkik edecek ve bundan istenilen eğitime rehber olacak çeşitli düzeylerdeki meslekler iş profillerini saptayacaktır. Uzman, yaklaşık 1 Mayıs, 1973 tarihinde 15 aylık bir süre için gelecektir.

22A. Müşavirler: Mesleki Rehberlik ve Kaynakçılık ile saç levha metal alanlarında toplam olarak on bir insan-aylık müşavirlik hizmeti öngörülmüş olup bu müşavirlerin takriben 1 Eylül, 1973de gelmeleri beklenmektedir.

23. Eğitim İmkânları: Öğrenimin İngilizce olarak yapıldığı kurumlarda 1 Eylül, 1973 tarihinde başlatmak üzere toplam olarak 120 insan-aylık 19 kursiyer eğitim için yurt dışında gönderilecektir. Burslar gidecekleri ülkelerin lisan şartlarını haiz kontrpart personel arasından seçilecek şahıslara verilecektir(BCA, 300 - 48 – 18-14).

Burslar	Başlama Tarihi	Süresi	Yeri:
1.E6-Mer en	1 Ocak, 1974	12 ay	İngiltere ve Torino
2 ve 3. Eğitim Standartları ve değerlendirme	1 Eylül, 1973 ve 1 Nisan, 1974	6 şar aylık	“
4 ve 5. İş Piyasası Analizi	1 Eylül 1973 ve 1 Nisan 1974	6 “	“ABD
6 ve 7.Çıracılık ve Fabrika içi Eğitim	1 Eylül, 1973 ve 1 Nisan 1974	6 “	“
8 ve 9. Öğretim Teknikleri	1 Eylül, 1973 ve 1 Nisan, 1974	6 “	“
10 ve 11. Motor Mekaniği	1 Eylül, 1973 ve 1 Nisan, 1974	6 “	“
12 ve 13. Teçhizat Planlama, tedarik ve Sevk ve idaresi	1 Eylül, 1973 ve 1 Nisan, 1974	6 “	“
14 ve 15. Elektro	1 Eylül, 1973 ve 1 Nisan, 1974	6 “	“
16 ve 17. Let ve Kalıp Yapma	1 Eylül, 1973 ve 1 Nisan 1974	6 “	“
18 Dökümcülük işi	1 Eylül, 1973	6 ay	“
19 Model Yapımı	1 Nisan 1974	6 ay	“

Bursiyerlerin lisan kabiliyetlerine göre değiştirilebilir. Adayın sahip olduğu akademik ve/veya teknik seviye onun uygun bir eğitimden geçebilmesini teminen doğru bir şekilde tesbit edilmelidir.

BMKP'nca sağlanan Teçhizat ve Malzeme

	Yeri	Teslim tarihi	Maliyeti
(I) Odiyo-Vizüel Teçhizat ve diğer Eğitim araç ve Gereçleri (%40,000)	Ankara	1 Nisan 1973'ten itibaren	a) 10.000 b) 30.000
(a) Harcanabilen teçhizat			
(b) Harcanamayan teçhizat			
(II) Büro Teçhizatı		Ekim 1972'den itibaren	4.000
(iii) Proje Taşıt Araçları-Dört(4)			
(a) Peugeot 504 Station Wagon	Ankara	Ekim, 1972	3,000
(b) Ford Station Wagon	Ankara	Nisan, 1973	3,000
(c) Ford Station Wagon	Ankara	Haziran, 1973	3,000
(d) Ford Station Wagon	Ankara	Haziran, 1973	3,000
			Teçhizat kısmı Toplam..... 56,000(BCA,300-48-18-15)
(IV) Destek Personel		1 Haziran 1972	7.500
(a) Sekreter	Ankara	1 Ekim 1972	3.320
(b) Şoför (4 tane)	Ankara	1 Nisan 1973	2.560
(c) Tercüman		1 Haziran 1974	2.310
		1 Haziran 1974	2.310
		1 Ocak 1973	6.000
			Toplam: 24.000

(v) Alt-kontraktör hizmetleri için tesisat; Yoktur

24. Hükümet Girdilerinin Tanımı:

Hükümet aşağıda gösterilen kontrpart katkıda bulunacaktır:

(a) Arazi ve Binalar Projenin kullanılması için iyi bir şekilde teçhiz ve teftiş edilmiş olarak Ankara Mesleki Eğitim Merkezi ve tesisleri tahsis olunacaktır.

Arazi ve Binalar: 16.650.00TL. Binalar ve teçhizat 1 Mayıs, 1972 den itibaren kullanılabilir.

(b) Proje Personeli Profesyonel kontrpart ve diğer destek personel aşağıda gösterildiği şekilde sağlanacaktır: (Projenin iki yıllık süresi için)

Profesyonel kontrpart personel maliyeti: 2.154.600 TL.

Destek personel maliyeti: 356.136 TL.

Otuz dokuncu sayfadaki ilgili tabloda belirtildiği gibi mevcut personel için sağlanan mümkün kolaylıklar dâhilinde Hükümet bütün gerekli idari ve mali tedbirleri alacaktır. Bu da Türk kontrpart personelin proje faaliyetlerine tam olarak katkıda bulunmalarını sağlayacaktır.

	Adedi	Süresi	Tarihi	Yeri
48 Nisan /ay	1 Nisan 1973	Ankara	1 Nisan 1973	Ankara
Kontrpartlar, Eğitim Standartları	2	48	"	"
" ", değerlendirme	2	48	"	"
" ", İş Piyasası Analizi	2	48	"	"
" ", Çıraklık ve Fabrika-içi	2	48	"	"
" ", Eğitim	2	48	"	"
" ", Öğretim Teknikler	2	48	"	"
" ", Motor Mekaniği	2	48	"	"
" ", Teçhizat Planlama,	2	48	"	"
Tedarik ve Sevk ve İdare	2	48	"	"
" ", Elektronik	2	48	"	"
" ", Alet ve alıp yapımı	2	48	"	"
" ", Dökümcülük işi	2	48	"	"(BCA,300-48-18-16)
Destek Personeli				
Teknik Ressamlar	2	48 Nisan/ay	1 Nisan 1973	Ankara
Tercümanlar	2	48	1 Nisan 1973	Ankara
Sekreter(Steno-daktilo)	1	24	1 Nisan 1973	Ankara
Daktilo	2	48	1 Nisan 1973	Ankara
Katip	1	24	1 Nisan 1973	Ankara
Ambar Memuru	1	24	1 Nisan 1973	Ankara
Hademe Adedi		24	1 Nisan 1973	Ankara

Burslar:

Burslu olarak ayrılan kontrpart personelin yerine geçici olarak görevlendirilecek personele ödenebilen maaş (Proje bütçesinin 30. maddesinde belirtildiği gibi)

Burslar:120 insan/ay - 574,560 TL.

(d) Teçhizat:

Ankara Mesleki Eğitim Merkezinin atölyelerinde el'an tesis edilmiş vaziyette Değeri: 9.495.000 TL. Harcanabilen teçhizat ve tüketilebilen maddeler için: 711.000TL.

(e) Müteferrik:

I. Proje teçhizatının ithalatı, gümrüklerden çekilmesi, nakliyesi, depolanması ve bununla ilgili masraflar (ülke içinde sigorta edilmesi gibi)

II. (d) paragrafında anılan teçhizatın işletme ve bakım masrafları: 711.000 TL.

III. Önceden görülemeyen çeşitli masraflar, toplam 300.000 TL. maliyetleri v.s. kapsayan; miktarı 250.000 TL'lik nakit katkı da dahildir. Nakit katkı projeye aşağıda belirtildiği gibi sağlanacaktır.

a)1 Nisan 1973'de-125.000 TL.

b)1 Nisan 1974'de- 125.000

Bu meblağlar BMKP'nin Osmanlı Bankası Merkez, Ankara nezdindeki 640/224 sayılı katkılar hesabına yatırılacaktır.

25. İş Çizelgesi

FAALİYET	1972	1973	1974
Bakanlıklar ve özel kuruluşların eğitim programlarının tetkiki.			
Fabrika-ıçi eğitim ve çırak eğitimini kapsayan sistemlerinin hazırlanış ve uygulanış ile ilgili olarak tavsiyede bulunmak.			
Bir Milli Endüstriyel Eğitimi Geliştirme Merkezinin geliştirilmesi(BCA, 300 - 48 – 18-17).			
Ülkenin çeşitli sanat kollarındaki eğitilmiş teknik eleman ihtiyaçlarının tesbiti.			
Endüstrinin ihtiyaçlarını karşılayacak programların geliştirilmesi.			
Eğitim standartları ile sanat testlerinin ihdası			
Eğitimcilerin teori ve atölye tatbikatı ile modern eğitim metotları konularında eğitilmeleri.			
Altı IBRD Merkezine dizayn, vaziyet planı ve teçhizatla yardım. Bir Mesleki Rehberlik Merkezinin kuruluşuna yardım.			
Altı IBRD Merkezi için eğitim kurslarının organizasyonunda ve kurs programları ile öğretim malzemelerinin hazırlanışında yardım sağlama.			
Çeşitli Bakanlıklar ve özel kuruluşlarca tertiplenen mevcut endüstriyel eğitim programlarının değerlendirilmesi.			
Kontrpart personelin eğitimi(BCA, 300 - 48 – 18-18)			

BMKP Girdileri

Proje Menajeri

Uzmanlar:

Eğitim Standartları ve Değerlendirme Uzmanlar: Eğitim Standartları ve Değerlendirme İş Piyasası Analizi Çıracılık ve Fabrika-içi Eğitim Öğretim Teknikleri Motor Mekaniği Teçhizat Planlama, tedarik ve sevk ve idaresi (BCA, 300 - 48 – 18-19)

Elektronik, Alet ve Kalıp Yapımı, Dökümcülük İş, Müşavirlik

Burslar

Eş-Manejeri 12 insan/ayı

Kontrpartlar (9) 54/ayı

Kontrpartlar (9) 54

Odiyö-Vizüel ve Gereçler

Büro Teçhizatı

Proje Taşıt Araçlar

(I)Pengeot 504 station wagon

(II) Ford station wagon

(III) Ford station wagon

(IV) Ford station wagon

Destek Personel

Sekreter

Tercüman

Şoförler:(I),(II), (III),(IV)

Hükümet Girdileri

Binalar ve Teçhizat

Kontrpart Porsonel

Destek Personel

Nakit atkı (Müteferrik bahsinde gösterildiği gibi)

73/74mali
yılında74/75
Mali
yılında(BCA,
300-48-18-
20)

IV. KISIM-

Proje Bütçesi BMKP KATKISINI KAPSAYAN PROJE BUTÇESİ (Amerika Doları Olarak)

ÜLKESİ: Türkiye PROJE NO: TUR/71/536/B/01/11

ADI: Milli Endüstriyel Eğitim Projesi

10. Proje Personeli	Toplam	1972	1973	1974
11. Uzmanlar	i/a \$	i/a \$	i/a \$	i/a \$
11.01. Proje Menajeri	33 82.500	9 22.500	13 30.000	17 50.000
11.02.Eğitim Standardları ve Değerlendirme	15 37.500		9 22.500	6 15.000
11.03. İş Piyasası Analizi	16 40.000		12 30.000	4 10.000
11.04. Çıraklık-Fabrika-içi Eğitim	15 37.500		9 22.500	6 15.000
11.05. öğretim Teknikleri	15 37.500		9 22.500	6 15.000
11.06.Motor Tekniği	15 37.500		8 20.000	7 17.500
11.07. Malzeme Planlama Tedarik ve sevk-idaresi	12 30.000		12 30.000	
11.08. Elektronik	15 37.500		8 20.000	7 17.500
11.09.Alet ve Kalıp Yapımı	15 37.500		12 30.000	3 7.500
11.10. Dökümcülük İş	15 37.500		8 20.000	7 17.500
11.11. Müşavirler	11 27.500		8 20.000	3 7.500
11.99TOPLAM (Uzmanlar)	177 442.500	9 22.500	107 267.500	61 152.500
13. İdari Destek Personeli	24.00	2.000	10.400	11.600
19.Kısım Toplamı (BCA, 300 - 48 – 18-21)	466.500	24.500	277.900	164.100

PROJE BÜTÇESİ-HÜKÜMET KATKISI (Türk Lirası Olarak)(BCA, 300 - 48 – 18-22)

10. Proje Personeli	i/a	Toplam Maliyeti	i/a	1973/74 Maliyeti	i/a	1974/75 Maliyet.
Eş-Menajer	24	126.000	12	63.000	12	63.000
Kontrpart Eğitim Standartları ve Değerlendirme	24	126.000	12	63.000	12	63.000
Kontrpart İş Piyasası Analizi "	24	92.400	12	46.200	12	46.200
Kontrpart Çıraklık/Fb. İçi Eğitim "	24	92.400	12	46.200	12	46.200
Kontrpart Öğretim Teknikleri "	24	109.200	12	54.600	12	54.600
Kontrpart Motor Mekaniği "	24	109.200	12	54.600	12	54.600
Kontrpart Teçhizat planlama, tedarik ve sevk-İdaresi "	24	92.400	12	46.200	12	46.200
Kontrpart Elektronik "	24	92.400	12	46.200	12	46,200
Kontrpart Alet ve Kalıp Yapımı "	24	109.200	12	54.600	12	54.600
Kontrpart Dökümcülük "	24	109.200	12	54,200	12	54.600
Kontrpart Dökümcülük "	24	92.400	12	46.200	12	46.200
TOPLAM Profesyonel Personel	456	1.890.000	228	945.000	228	945.000
Sosyal Güvenlik(%14)		246.600		132,300		132.300
KISIM TOPLAMI	456	2.154.600	228	1.077.300	228	1.077.300(BCA, 300 - 48 - 18-23)

PROJE BUTÇESİ-HÜKÜMET KATKISI (Devama)

	Toplam	1972	1973/74	1974/75
40. Teçhizat				
41. Harcanabilen Teçhizat	711.000	--	355.500	355.500
42. Harcanamayan Teçhizat	9.495.000	9.495.000		
43. Bürolar	16.650.000	16.650.000		
49. Kısım Toplamı	26.856.000	26.145.000	355.500	355.500
50. Müteferrik				
51. Teçhizatın İşletilmesi ve Bakımı	711.000	--	355.500	355.500
53. Çeşitli	300.000	--	160.000	140.000
59. KISIM TOPLAMI	1.011.000	--	515.500	495.500
99. GENEL TOPLAM	30.952.296	26.145.000	2.413.648	2.393.648(BCA,300-48-18-24)

Y- PROJENİN ORGANİZASYONU**Genel Sorumluluklar**

1. Hükümet, BMKP ve Uygulayıcı Kuruluş hep birlikte projenin uygulanışından ve bu proje dokümanının II. kısmında tanımı yapılan amaçların gerçekleştirilmesinden sorumlu olacaklardır.

2. Hükümet projeye milli proje personelini, eğitim tesislerini, araziye, binaları teçhizatı ve diğer gerekli hizmet ve kolaylıkları sağlayacak, bundan böyle "İşbirliği Yapan Kuruluş" olarak anılacak ve Hükümetin projeye katkısının uygulanmasından doğrudan doğruya sorumlu olacak olan ve bu dokümanın kapak sayfasında adı geçen Hükümetin İşbirliği Yapan Kuruluşunu tayin edecektir.

3. BMKP Hükümetin iştirakini tamamlayıp ancak ek katkıda bulunmayı ve projeye tahsis olunan para çerçevesi dâhilinde ve Uygulayıcı Kuruluş kanalıyla gerekli uzmanlık hizmetlerini, eğitimi, teçhizat ve diğer hizmetleri sağlamayı deruhte eder.

4. Projenin başlamasını müteakip Uygulayıcı Kuruluş projenin uygulanışı ile ilgili asli sorumluluğu üzerine alması istenilebilir. Ancak bu gibi bir sorumluluk İşbirliği Yapan Kuruluş ile gerekli istişare ve mutabakattan sonra tatbik olunacaktır. Gerek bu konuyla gerekse bu

sorumluluğun projenin uygulanma devresince Hükümet'e veya Hükümet'in tayin edeceği bir kuruluşa devri ile ilgili düzenlemeler projenin Çalışma Planında belirtilecektir.

5. Hükümet iştirakinin bir kısmı BMKP'na yapılacak nakit şeklinde olabilir. Böyle bir durumda Uygulayıcı Kuruluş ilgili hizmet ve kolaylıkları sağlayıp nakit katkının harcanışı hakkında BMKP ile Hükümete her yıl hesap verecektir.

Hükümetin İştiraki

6. Çalışma planında belirtilen miktar ve zamanlarda Hükümet proje hizmetlerini, teçhizat ve kolaylıklarını projeye sağlayacaktır. Hükümetin iştiraki-ayni veya nakdi ile ilgili tedbirleri Proje bütçelerinde zikredilecektir.

7. İşbirliği yapan Kuruluş Uygulayıcı Kuruluş ile istişareden sonra proje için tam gün çalışan, bir proje eş menajerini tayin edecektir. Proje eş menajeri İşbirliği Yapan Kuruluşça kendisine verilen sorumlulukları yükleneyecektir.

8. Proje Bütçesinde detaylı olarak belirtilen Hükümet katkısına dahil kalemlerin tahmini maliyetleri, bu proje teklifinin kaleme alındığı sırada mevcut en iyi bilgilere dayandırılmalıdır. Projenin uygulanışı sırasında meydana gelecek fiyat dalgalanmaları, bahis konusu katkının para yönü ile ilgili olarak bir ayarlama yapmayı gerektirebilir; böyle bir ayarlama her halükârda projenin gereği gibi uygulanması için gerekli hizmet, teçhizat ve kolaylıkların değerine göre saptanacaktır.

9. Hükümetçe sağlanan proje personeli ile ilgili olarak Çalışma Planında tanı- mı yapılan personel hizmetleri insan/günleri toplamını aşmamak, Uygulayıcı Kuruluş ile istişarelerde bulunmak şartı ile ve projenin menfaatine olduğu görüşü sağlandığı takdirde proje personeli ile ilgili ferdi tayinlerde küçük ayarlamalar Hükümetçe yapılabilir.

10. Hükümet BMKP bursları ile yurt dışında ve projeden uzak bulundukları sürede bursiyer milli proje personelinin maaş ve ödeneklerini ödemeye devam edecektir(BCA, 300 -48-18-25).

11. Hükümet proje teçhizatının gümrüklerden çekilmesi ile ilgili resim ve diğer masrafları bunların nakliye, sevk ve depolanmaları ile ülke içinde doğacak diğer masraflarını karşılayacak, bahis konusu teçhizatın proje mahallinde teslimini müteakip, muhafazasından, tesis ve bakımından, sigorta edilmesinden ve gerekirse yerine yenisinin alınmasından sorumlu olacaktır.

12. Hükümet güvenlik yönünden bir mahzuru olmamak şartıyla projenin uygulanması için gerekli telakki olunan yayınlanmış veya yayınlanmamış bulunan her hangi bir rapor, harita, kayıt ve diğer bilgileri projeye sağlayacaktır.

13. Hükümet makûl bir kirayla müsait ev bulmalarında bütün proje personeline yardımcı olacaktır.

14. Nakit katkı yoluyla gerçekleştirilecek ve Hükümetçe projeye sağlanacak olan Çalışma Planında belirtilen hizmet ve kolaylıklar Proje Bütçesinde zikredilecektir. Bu meblağ Hükümet Ödemeleri Tarifesine uygun olarak BMKP'na Türk parası olarak ödenecektir.

15. Yukarda bahsi geçen katkının Ödemeler Tarifesinde belirtilen tarihte veya daha önce Hükümet tarafından BMKP'na ödenmesi proje uygulamalarının başlaması veya devamı için bir ön şarttır.

BMKP'nın ve Uygulayıcı Kuruluşun İştiraki:

16. BMKP Çalışma Planında tanımlanan hizmet, teçhizat ve kolaylıkları Uygulayıcı Kuruluş kanalı ile projeye sağlanacaktır. BMKP katkısı ile ilgili bütçe tedbirleri proje Bütçesinde zikredilecektir.

17. Uygulayıcı Kuruluş, kendi idaresi altında bu şun ülkede projeye iştirakinden sorumlu olacak Proje Manejerinin adaylığı ile ilgili olarak Hükümet ile danışmalarda bulunacaktır. Proje Manejeri projeye tayin edilen uzmanlarla diğer kuruluş personeline ve milli proje personelinin işbaşı eğitimine nezaret edecek, BMKP fonlarından projeye sağlanan bütün malzemelerin sevk ve idaresinden sorumlu olacaktır.

18. Uygulayıcı Kuruluş Hükümet ile istişarelerde/Çalışma Planında belirtilen uluslararası ve diğer

personeli projeye tayin edecek, burslar için adayları seçip milli proje personelinin eğitimiyle / standartları saptayacaktır.

19. Burslar Uygulayıcı Kuruluşların burslarla ilgili nizamnamelerine uygun olarak verilecektir.

20. Hükümet ve BMKP ile mutabakat sağlandıktan sonra Uygulayıcı Kuruluş projenin bir kısmını veya tamamını alt-kontrat ile uygulayabilir. Alt-kontraktörlerin seçimi Hükümet ile istişareden sonra Uygulayıcı Kuruluşun usüllerine göre yapılır.

21. BMKP kaynakları ile satın alınan bütün levazım, teçhizat ve malzemeler munhasıran projenin uygulanması için kullanılıp BMKP malı olarak kalacak ve onun namına Uygulayıcı Kuruluşun sembolleri ile işaretlenecektir.

22. Nihai devir-teslime hâle gelmeksizin teçhizatın proje süresince geçici olarak ve gereği halinde mahalli makamlara devri için düzenlemeler yapılabilir.

23. BMKP'nın projeye yardımı tamamlanmadan önce, BMKP'nca sağlanan bütün projeye teçhizatının ne yapılacağı hususunda karar vermek üzere Hükümet, BMKP ve Uygulayıcı Kuruluş istişarelerinde bulunacaktır." Normal olarak bu gibi teçhizatın mülkiyeti Hükümete veya projenin devamı veya doğrudan doğruya bundan meydana gelen faaliyetler için lüzumlu olduğu hallerde Hükümetin göstereceği bir varlığa devrolunur. Ancak BMKP bu teçhizatı bir kısmı veya hepsi üzerinde mülkiyet hakkını korumaya karar verebilir(BCA, 300 - 48 – 18-26).

24. BMKP'nın projeye yaptığı yardımın tamamlanmasını müteakip mutabık kalınan bir tarihte Hükümet, BMKP ve gereği halinde Uygulayıcı Kuruluş projenin sonuçlarının bir değerlendirilmesini yapmak gayesiyle projeden devam eden veya onun bir neticesi olan faaliyetleri gözden geçireceklerdir.

Kolaylık, Ayrıcalık ve Bağışıklıklar

25. Yardım sağlanması ile ilgili olarak BMKP ile Hükümet arasında akdolan anlaşma mucibince BMKP ile Birleşmiş Milletler Kuruluşlarının personeli bahis konu su anlaşmada belirtilen kolaylık, ayrıcalık ve bağışıklıklardan faydalandırılacaklardır.

Alt Kontraktörler ve Personeli

26. Uygulayıcı kuruluşun kontraktörleri ve personeli (mahalli olarak istihdam edilen Türk uyruklu personel hariç) a) Projenin uygulanışı sırasında resmi sıfatları altında giriştikleri her hangi fiilden dolayı kanuni takibat'tan, b) Askerlik hizmetinden; c) Kendileri, eşleri ve onlara bağlı akrabaları muhaveret kısıtlamalarından masun olacak, d) Proje maksatları veya bu gibi personelin şahsi harcamalar için makul miktarlarda yabancı parayı Türkiye'ye getirmek ve ülkeye getirilen paranın herhangi bir kısmını veya ilgili döviz nizamnameleri mucibince projenin uygulanması için orada bulunan personelce kazanılan meblağları çekmek için gerekli ayrıcalıklardan faydalandırılacaklar; e) Uluslararası bir kriz vukuunda kendilerinin, eşlerinin veya kendilerine bağlı yakınlarının ülkelerine geri gönderilmeleri için diplomatlara tanınan kolaylıklardan aynen faydalandırılacaklardır.

27. Uygulayıcı Kuruluş kontraktör personelinin hepsine bütün proje kağıt ve dokümanları ile ilgili olarak edilmezlik hakkı tanınacaktır.

28. Hükümet,

(a) Projenin uygulanmasında bu gibi yabancı personelce kazanılan maaş veya yevmiyelerini;

(b) Proje maksatları için ülkeye getirilen veya getirdikten sonra ülkeden çekilen teçhizat, levazım ve malzemeyi;

(c) Projenin uygulanması için yukarıda (b) bendinde belirtilen malzemenin çalıştırılması veya bakımı için benzin ve yedek parça gibi mahalli olarak ve mühim miktarlarda mübayaa olunan teçhizat, levazım ve malzemeyi (şu şartla ki muaf tutulacak tipler takribi miktarlar ile takip edilecek usuller hakkında Hükümet ile mutabakat sağlanacak ve uygun olarak bu husus Çalışma Planına kaydolunacaktır)

(d) BMKP ile Uygulayıcı Kuruluş personeline elan tanınmakta olan ayrıcalıklar gibi ve aralarında görevli başına bir özel binek arabası olmak üzere görevliler, firma veya kuruluşlar

veya personeli tarafından kullanılmak veya tüketilmek üzere getirilen veya getirildikten sonra bu gibi personelin ülkeden ayrılırken beraberinde ülkeden çıkardığı herhangi bir malı, herhangi bir yabancı firma veya kuruluştan ve Uygulayıcı Kuruluşla bu gibi yabancı firma veya kuruluşun personelinden alınan vergi, gümrük, resim, ücret v.s. den muaf tutacak veya böyle bir ödeme yapılması halinde bunların yaptıkları ödemeleri aynen karşılayacaktır.

29. Uygulayıcı Kuruluş veya BMKP bu gibi firma veya kuruluşlarla onların personeline tanınan/yukarıdaki paragraflarda adı geçen bağışıklılık ve ayrıcalıkları adaletin tecellisine bir mani teşkil ettiği hallerde bahis konusu bağışıklılık ve ayrıcalıkları geri alabilir şu şartla ki, böyle bir hareket projenin başarılı bir şekilde tamamlanmasına veya BMKP'nin veya Uygulayıcı Kuruluşun menfaatlerine hanel getirmemiş olsun.

30. Uygulayıcı Kuruluş yukarıda ad geçen ayrıcalık ve bağışıklıklardan faydalananak personelin bir listesi Hükümete Birleşmiş Milletler kalkınma Programının Türkiye nezdindeki Daimi Temsilcileri eliyle sunacaktır(BCA, 300 - 48 - 18-27).

Öte yandan hazırlanan bu proje kapsamında TÜBİTAK'a bağlı Marmara Bilimsel ve Endüstriyel Araştırma Enstitüsü'nün Malzeme Araştırma Birimi'ne üç yıl süreyle yıllık 599.000 dolar yardım yapılması ön görülmüştür(BCA, 314-32-7). Birleşmiş Milletler Kalkınma Program çerçevesinde ve Uluslararası Çalışma Teşkilatının (ILO) işbirliği ile yürütülmesi öngörülen Milli Endüstriyel Eğitim Projesinde çeşitli ihtisas dallarında ihtiyaç duyulan elemanların sözleşmeli olarak çalıştırılmaları zorunlu bulunmaktadır(BCA, 333 - 37 - 14-3).

Bu projede çalıştırılmak üzere sözleşmeli uzman alımları yapılmıştır(BCA, 323 - 77 - 4-1). Bu uzmanlar Erkek Teknik Öğretim Müdürlüğünde görevlendirilmiştir(BCA, 323 - 77 - 4-3). Bütüt aylık(BCA, 323 - 77 - 4-1) 7.000 tl. Ücretle eğitim standartları ve değerlendirme uzmanı, 7.000 tl. Ücretle iş piyasası uzmanı ve 8.000'tl ücretle alet ve kalıp yapımı uzmanı alınmıştır(BCA, 323 - 77 - 4-2). Bu görevlendirmeler 01.03.1975 tarihinde başlayıp 29.02.1976 tarihinde bitmesi ön görülmüştür(BCA, 333 - 37 - 14-2). Bu uzmanlar için örnek öz geçmiş çizelgeleri hazırlanmıştır(BCA, 333 - 37 - 14).

SONUÇ

Üretim süreçlerinin en önemli aşamalarından olan nitelikli insan gücü ihtiyacı sanayi devriminden bu yana ülkelerin önemli sorunlarından biri olmuştur. Bu nedenle insan gücünün planlanması ülkeleri eğitim programlarını mesleki eğitim konusunda düzenlemeye zorlamıştır. Özellikle II. Dünya Savaşı sonrasında ortaya çıkan büyük felaket-yokluk yoksulluk ve insan kaybı- bu konunun önemini daha da artırmıştır. Amerika, Japonya, Norveç, İngiltere vs. ülkeler mesleki eğitim ve fabrika-içi eğitim konularında ilk-orta ve yükseköğrenim kademelerinde düzenlemeler yapmışlardır.

Ülkemizde Cumhuriyet ilan edilmeden evvel 17 Şubat 1922 tarihinde toplanan İzmir İktisat Kongresinde mesleki eğitimin önemine dikkat çekilmiştir. Osmanlıdan kalan zanaat ve sanat okulları kapatılmayarak yeni okullar açılmıştır. Mesleki okulların açılması başlangıçta belediyelerin kontrolündeyken daha sonra bu okullar Maarif vekâleti bünyesine alınmıştır. Mesleki eğitim sahasında 1960'lı yıllarda mühim adımlar atılmıştır. 1972 yılında III. Beş Yıllık Kalkınma Planında mesleki eğitim konusunda tafsilatlı bir proje hazırlanmıştır. 1972 yılından 1977 yılına kadar uygulanması ön görülen planda gerekçe olarak tarım dışı sektörlerin ara eleman ihtiyacının karşılanması belirtilmiştir. Birleşmiş Milletlerin az gelişmiş ülkelere yönelik Birleşmiş milletler kalkınma planı çerçevesinde "Milli Endüstriyel Eğitim Merkezi Projesi" hazırlanmıştır. Bu programa göre proje masraflarının bir kısmını Türkiye bir kısmını ise BKMP tarafından karşılanması kararlaştırılmıştır. İstanbul başta olmak üzere Ankara, Adana İzmir gibi vilayetlerde kurslar açılmıştır. Yine bu plan çerçevesinde hangi iş sahasında ne kadar elemana ve nasıl bir eğitime ihtiyaç duyulduğu konusunda bir ön çalışma hazırlanmıştır. Eğitim bu iş kolları çerçevesinde planlanmıştır. Model yapımı, motor mekaniği, dökümcülük, alet ve kalıp yapma vb. konularda kurslar açılmıştır. Burada eğitim alacak kursiyerlere burs verileceği belirtilmiştir. Bursiyerler için örnek öz geçmiş formları hazırlanmıştır. Programın uygulanması için Birleşmiş Milletler Türkiye'de daimi bir temsilci bulunduracağı belirtilmiştir.

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National Industrial Training Center Project (1973-1977)

Neslihan BOLAT BOZASLAN¹

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Abstract

The mode of production in the world changed with the start of the industrial revolution in the 19th century. While the need to train qualified personnel in production branches started during this period, its real importance emerged after the Second World War. From this date onwards, many countries felt the need to make regulations for vocational education. Countries such as America, Japan, England, and Norway have made various legal regulations on this issue and opened schools for industrial education. They have especially taken initiatives on this issue since the 1960s. In the Ottoman Empire, until the 19th century, a vocational education based on master-apprentice training was carried out in the Ahi organization. As of the century in question, various art and craft schools were opened to employ people in the factories established. In the Republican era, since the primary goal of the newly established state was to improve the economy, the Izmir Economics Congress was convened before the Republic was even declared, and the importance of vocational schools for industrialization was mentioned in this congress. For this purpose, the existence of art and craft schools remaining from the Ottoman Empire was preserved. In 1928, a nationwide industrial education mobilization was initiated, and students were sent to Europe. As in the rest of the world, substantial efforts toward industrial education in our country began in the 1960s. In 1960, the Vocational and Technical Education Research and Programming Department was established, followed by the establishment of the General Directorate of Vocational and Technical Higher Education in 1966. In 1972, the National Industrial Education Center Project (1973-1977) was launched within the framework of the United Nations Development Program initiated for underdeveloped countries. This program took its place within the Third Five-Year Development Plan. According to the program, which was planned to last five years, the establishment of industrial education centers in cities such as Istanbul, Bursa, Adana, and Eskişehir was foreseen.

The aim of this study is to explain the National Industrial Education Center Project, which was planned as a development initiative, in light of archival sources.

Keywords: Vocational Education, Industrial Training, United Nations Development Programme, III. Five-Year Development Plan

ENTRANCE

Industrial workforce planning has become widespread after World War II. The economic, social, and technological changes that emerged at the end of the war necessitated the planning of human resources (İşler, 1997). In many countries, such as England, America, and Japan, plans were made, and legal regulations related to the training of intermediate-level personnel were initiated. In America, community colleges, in Japan, universities, junior colleges, and colleges of technology, as well as special training schools, have addressed the need for industrial education through institutions like the Boards of Regional Colleges in Norway (Başkan, 1999). In England, with the document titled "White Paper," proposals for 'Industrial Education and Government Initiatives' were prepared to outline the actions to be taken in this regard (Pamuk, 1996).

The history of vocational education in our country can be traced back to the Ahi organization (Gemici, 2010). This process, based on the master-apprentice relationship that began with Hacı Nasuriddin bin Mahmud in Anatolia, continued in the Ottoman Empire until the 19th century

¹ Assoc. Prof. Dr., Gaziantep University, Faculty of Arts and Sciences, Gaziantep, Türkiye; e-mail: bolat@gantep.edu.tr
; ORCID: 0000-0003-3345-356X

(Kızıler, 2015). After this date, with the establishment of modern factories, schools focused on vocational education began to be opened. For example, while serving as the governor of Niş, Mithat Pasha opened a vocational school named Islahhane in 1861 to educate Muslim and Christian orphaned children. During the reign of II. Abdülhamid, many schools of art and profession, such as agricultural schools and fine arts, were established (Gündüz, 2008). The first institution opened in 1911 to train technicians was the "Kondüktör Mektebi" (Henden&Tunç, 2005). Following the declaration of the Republic, the establishment of technical high schools was supported alongside general high schools. The 1st Scientific Committee program in 1923 (Tanır&Aslan, 2019) addressed vocational and technical education. Additionally, the establishment of apprenticeship schools was discussed at the İzmir Economic Congress. In 1927, vocational and art schools were placed under the Ministry of Education, and a nationwide mobilization for vocational education was initiated in 1928 (Gemici, 2010). For this purpose, a total of 133 students, both girls and boys, were sent to Europe. In the 1934-1936 academic years, a "Plan for the Development of Vocational Education" was prepared. Regulations regarding vocational education continued in the 1940s, and in 1941, the Vocational and Technical Education Undersecretariat was established (Ünlü, 2016).

Türkiye, while developing economically and rapidly industrializing, did not establish an in-industry, industrial education policy until the 1960s. The necessity for an in-industry education policy in Turkish industry first emerged in the 1960s, as industrial development began to manifest in Türkiye after this time. As industrial development accelerated, the demand for qualified human resources needed to adapt to changing technologies in the industry highlighted the importance of in-industry industrial education, and enterprises engaged in industrial activities began to address this need individually within their own ranks (Türkkan, 1978). By 1960, the Directorate of Vocational and Technical Education Studies and Programming was established, followed by the General Directorate of Vocational and Technical Higher Education in 1966. In 1973, during the restructuring process of education, an associate degree level was introduced in higher education, leading to the establishment of vocational schools to train intermediate-level human resources (Official Gazette, 24. 6. 1973 - Issue: 14574). Within the framework of the United Nations Development Programme, the National Industrial Education Center Project was initiated to train intermediate-level personnel in industrial education.

The Aim of the Study

The aim of this study is to explain the "National Industrial Training Center Project," prepared by BKMP and Türkiye in collaboration to meet the intermediate staff needs in non-agricultural sectors, using documents obtained from the General Directorate of State Archives.

Method:

In preparing this study, the procedures and methods used in historical research have been employed. In this context, the topic was first determined and limited. Then, relevant copyrighted works were examined. Finally, an archive search related to the topic was conducted. Archive documents and copyrighted works were reviewed with notes taken and categorized according to their subjects. After the classification process was completed, the writing phase began.

FINDINGS:

National Industrial Training Center Project (1973-1977)

The continuous development of our country year by year and the increase in investments in the industrial sector have created a need for qualified personnel to work in this field. In this context, to meet the demand for specialized personnel in non-agricultural sectors, the National Industrial Training Center Project was approved on June 12, 1973, with the support of the United Nations Development Program, as foreseen in the Third Five-Year Development Plan (<https://www.sbb.gov.tr/kalkinma-planlari/>). In fact, the program was prepared in 1972 and was accepted on June 12, 1973, based on the agreement made between our Government and BKMP in Ankara on January 30, 1973, and came into effect with its publication in the Official Gazette No.

14611 on Tuesday, July 31, 1973 (<https://www.resmigazete.gov.tr/arsiv/14611.pdf>). The cover of the project contains the following information (BCA, 300 - 48 - 18-1):

UNITED NATIONS DEVELOPMENT PROGRAM TURKISH GOVERNMENT PROJECT TITLE: National Industrial Training Project NUMBER: TUR /71/536/B/01/11, DURATION: Two years SECTOR: Industry, SUBSECTOR: Industrial Training COOPERATING ORGANIZATION OF THE GOVERNMENT: Ministry of National Education IMPLEMENTING ORGANIZATION: International Labour Organization (ILO) Submission date: September 22, 1972 Start date: January 1, 1973 Government contribution: 30,952,296 (Turkish Lira) UNDP contribution: 591,400 (US Dollars) Date of approval: January 30, 1973 on behalf of the government (Signature) Date on behalf of the implementing organization: January 30, 1973 (Signature) Date on behalf of UNDP: January 30, 1973 (Signature) (BCA, 300 - 48 - 18-2). As can be understood from the table of contents of the project booklet, the project consists of four sections and one annex (BCA, 300 - 48 - 18-3).

I. Section: Knowledge accumulation and supporting information as project requirements

The aim of the project is to assist the Government in organizing and developing a National Industrial Training Project to meet the country's increasing demand for qualified human resources.

The rationale for this project is the Turkish development policy articulated in the Third Five-Year Development Plan covering the years 1973-1977. (The Third Five-Year Development Plan emphasizes factory-based training with the expression "industrial facilities are not only production institutions but also education and training institutions" (Turan, 1996)). The plan also aims to rapidly elevate the standard of living and reduce Türkiye's dependence on external resources, thereby increasing National Income.

3. The difficulties anticipated in meeting the demand for qualified human resources arising from the rapid industrial development envisioned in the Third Five-Year Development Plan will necessitate (a) the development of industrial education in accordance with the needs of industry and the economy, (b) the preparation of suitable educational programs, and (c) the establishment of collaboration and coordination in the implementation of existing educational programs.

Knowledge Accumulation

(*)(The statistical figures used in Tables 1 to 6 of this document should be considered provisional and corrections should be made after the final version of the Third Five-Year Plan is published.)

4. The project will provide assistance for a total of six Pre-Employment Training Centers to be constructed by the Government, two in Istanbul and the others in Eskişehir, Bursa, İzmir, and Adana. The necessary equipment for these Centers will be provided from bonds issued by the International Bank for Reconstruction and Development (IBRD). The estimated cost of the six Centers is 52,416,000 TL, with a Government contribution and IBRD bonds totaling 19,784,000 TL, making a total of 72,200,000 TL.

5. As soon as the necessary buildings are provided to meet the needs of local industry, a pre-vocational training program will be initiated in these centers.

Population:

6. According to the last population census conducted in 1970, the population of Türkiye is 36,666,549. Based on the data in Table 1, the population is increasing at an average rate of 2.6% per year.

7. Thirty-five percent of the population lives in cities with a population of over 10,000, while sixty-five percent resides in rural areas. There is a yearly increase in the percentage of the population living in urban areas. With the rise of industrialization, migration from villages to cities is increasing.

Table 1. Distribution of Population by Age Group (BCA, 300 - 48 - 18-4).

Year	Active Population	Inactive Population	
	15 to 64 ages	Under 15 years old	Upon 64 years old
1955	% 57.05	% 39.37	% 3.58
1960	% 55.22	% 41.25	% 3.53
1965	% 54.16	% 41.74	% 4.10
1970	% 54.18	% 41.51	% 4.37

Türkiye's population growth rate also creates employment problems. This is because a growing population increases the labor supply. When employment opportunities fail to meet the demand, the number of agricultural workers increases. In other words, disguised unemployment emerges, increasingly manifesting as open unemployment in non-agricultural sectors.

Table 2. Distribution of Employment by Sector (excluding Armed Forces)

Age Group 15-64 (male and female)

	% 1962	% 1967	% 1971	% 1972
Agriculture	77.1	71.3	66.1	65.0
Industry	8.3	9.2	10.9	11.3
Construction	2.6	2.9	3.1	3.2
Commerce	2.7	3.1	4.4	4.5
Transportation	2.2	2.5	3.2	3.3
Services	6.4	8.3	11.3	11.7
Others	0.7	2.7	1.0	1.0
TOTAL:	100.0	100.0	100.0	100.0

According to Table 2 above, the proportion of people employed in the industrial and service sectors increased continuously between 1962 and 1972.

8. The annual increase in the urban population between 1962 and 1972 was 5.15 percent, an increase that exceeds the annual population growth rate. This increase is due to rural-to-urban migration rather than the difference between births and deaths.

9. Urbanization and industrialization, developing in the same direction, indicate that Türkiye's social structure is rapidly changing. From this perspective, urbanization can be considered a positive development for Türkiye. The development of urban centers, in particular, indicates an increase in the number of cities with populations over 20,000 (BCA, 300 - 48 - 18-5).

Economic information:

The economic justifications for the project have been explained.

10. Third Five-Year Development Plan is to accelerate the development of the Turkish economy and make it sustainable. A 68.5% increase in GNP is expected during the implementation of this plan, and the average annual growth rate of the economy is estimated at 7.8%. However, considering the rapid population growth rate, this average annual 7.8% increase will translate into a 4.4% increase in GNP per capita.

11. The industrial sector will play a significant role in this development. Industry's share of GNP, which was 16.3% in 1967, is expected to rise to 25.0% in 1972 and 27.0% in 1977. The overall goal of achieving this increase is to expand employment opportunities and channel excess labor in the agricultural sector into activities outside of this sector. Furthermore, it is essential to utilize educated labor more effectively and further accelerate the pace of industrial activity.

Table 3. Development of Employment in Non-Agricultural Sectors, Age Group 15-64 (male and female)

Sectors	1962	1967	1971	1972 (*)
Industry	995	1.175	1.450	1.519
Construction	305	369	419	433
Commerce	328	395	581	605
Transportation	258	325	420	450
Services**				
Total	2.654	3.321	4.364	4.586

*Calculations are based on population growth targets.

**Bank and insurance workers are included in the services sector.

12. Third Five-Year Development Plan envisions significant changes in the workforce structure due to rapid economic development. As a result, a significant increase in the number of skilled workers will be required, as will a redistribution of job categories. Special efforts should be made to raise the level of personnel in both education and industry (especially in manufacturing and service industries) (BCA, 300-48-18-6).

Employment

13. During the third five-year plan, greater job opportunities will be created in cities by focusing on industrialization. Various measures will be taken to support the rapid growth of the economy by 7.8% and create more job opportunities, and special efforts will be made in regions with high unemployment.

Table 4. Estimates of Employment in the Non-Agricultural Sector (Third Five-Year Plan Cycle) (Age group 15-64 (male and female)(in thousands)

Sector	1972	1977	1982	1987	1995
Industry	1.519	2.012			
Construction	433	683			
Commerce	605	726			
Transportation	450	615			
Services	1.579	2.072			
Total:	4.586	6.197			

Employment areas and number of employees expected to increase between 1972 and 1977

Table 5 below shows unemployment rates in non-agricultural sectors and the manpower, supply and demand situation in the period 1968-1972.

	1968	1969	1970	1971	1972
Supply	4,449	4,730	5,037	5,369	5,729
Demand	4,049	4,317	4,607	4,920	5,259
Unemployment	400	413	439	448	470
Unemployment Percentage	% 9.0	% 8.7	% 8.5	% 8.3	% 8.2

15. The State Planning Organization's technical departments have conducted a detailed study of manpower needs across various skill levels and across major economic sectors. The needs projections were extended to 1992 because the development of vocational training facilities and the training of specialized personnel needed by the labor market require a substantial period of time.

16. The criterion used in planning manpower needs in the Third Five-Year Development Plan was the estimated growth targets of sectors for this period. The method used in manpower planning required establishing a relationship between the work breakdown of employment and sectoral

output for 1955, 1960, and 1965 (BCA, 300 - 48 - 18-7). Manpower needs planning was based on elasticity ratios for 1955, 1960, and 1965, and future employment levels were determined based on the adjusted elasticity ratios for these three years. Furthermore, the plans were adjusted according to worker attitudes and values and the investment-qualified manpower ratios. These were evaluated as the results of three nationwide studies. Table 6 presents the results of the studies conducted at the artisan level. 17.

Table 6. Manpower Requirements (1972-1992) in Thousands (Demand for Skilled Workers)

Demand for Skilled Workers	1972	1977	1992
1. Steel and Foundry Worker Demand	36,0	62,0	242,0
2. Machinery	371,0	543,0	2.346,0
3. Electrical	132,0	205,0	873,0
4. Construction	176,0	260,0	919,0
5. Others	1.044.0	1.208.0	4.916.0
TOTAL:	1.759,0	2.278,0	9.296,0

Institutional Framework:

18. The Turkish Government acknowledges that the overall responsibility for the organization and implementation of the Project rests with the ILO, which will be appointed by the UNDP as the implementing body and will plan and manage the implementation through a project manager to be appointed by the implementing body in consultation with the Government.

19. The responsible body for government cooperation will be the Ministry of National Education.

20. The project will be managed by a board of directors and this board of directors will be responsible for achieving the objectives and obligations of the project.

21. The Board of Directors will have full authority to determine project policy in accordance with the project objectives and will ensure close cooperation and coordination between relevant ministries and industrial organizations to take the necessary measures to achieve the project's objectives. The Board of Directors will operate in accordance with the instructions to be prepared after the Project Document is signed and implementation begins.

22. The Board of Directors shall be chaired by the Undersecretary for Vocational and Technical Education of the Ministry of National Education or his/her representative, and shall consist of a high-level representative from each of the following ministries and organizations: State Planning Organization; Ministry of National Education; Ministry of Labor; Ministry of Industry and Technology; Turkish Labor; Turkish Employers' Confederation; Union of Chambers of Commerce; Confederation of Turkish Tradesmen and Craftsmen; and National Productivity Center. Each board member shall have one vote. More than one representative from each organization may attend Board of Directors meetings, provided that their voting rights remain unchanged.

23. The Project Manager and the Turkish Co-Director will attend Board meetings but will not have the right to vote. They will advise and provide all necessary information on the project. The Permanent Representative of the UNKC will be invited to Board meetings in an advisory capacity but will not vote. Authorized representatives of other public or private sector organizations approved by the Board may be invited to attend meetings.

24. Project activities will complement assistance provided by bilateral and multilateral sources, particularly on the In-Plant Production of Engineers (TUR/68/529) and Occupational Safety and Health (TUR/67/518) projects (BCA, 300 - 48 - 18-8).

25. The buildings and facilities of the Ankara Vocational Training Center will be well equipped and furnished and allocated for use by the Industrial Training Development Center, where the project will be implemented.

26. The National Industrial Education Project will be carried out with the allocation to be made in the Budget of the Ministry of National Education upon the recommendation of the Administrative Board.

27. The implementation of this project will be carried out in accordance with the principles and institutional developments outlined in the Third Five-Year Plan.

Existing Vocational Training Facilities

28. Some public and private enterprises, particularly the Ministries of National Education, Labor, and Industry, have established various vocational training systems for industry: art schools, night courses, and in-factory training programs.

Ankara Vocational Training Center

29. The purpose of the monitor training courses, initiated in 1963, was to provide knowledge, training, guidance, and skill development to employed foremen so that they could ultimately become competent foremen-trainers in their own factories. There has been a positive response to monitor training programs among industrial organizations.

30. The primary drawbacks of the Monitor training program are the lack of facilities for skill development and the lack of practical training at the Center. However, training workshops for some basic trades (such as turning, milling, electrical installation, and electrical and oxygen welding) have been equipped, and training in these branches began in 1969. There are also plans to expand the Center to increase capacity to 300 students and increase the annual number of graduates to 1,000.

Training Needs

31. A comparison between the projected workforce demand, determined by the sector growth targets of the Third Five-Year Development Plan, and the estimates regarding workforce supply based on the existing formal and non-formal education capacity indicates significant gaps in the workforce supply.

32. The current education systems in Türkiye are unable to meet the needs in terms of both quantity and quality. Although there are efforts to reform the education programs in art schools, the number of individuals to be trained there is very small compared to the manpower shortages mentioned above. Additionally, if workers have only been trained in a school environment, they struggle to adapt to factory conditions. Therefore, it is preferable for them to be trained in a factory. If workers are trained by utilizing the equipment and facilities of the workplace, more efficient results will be achieved more quickly. Furthermore, informal education is more flexible as it allows for adjustments in both capacity and curriculum according to needs. Thus, the Third Five-Year Development Plan emphasizes the organization of informal education in a way that provides essential basic training in various occupations.

33. Both in public and private sectors, there is a need for professional art education expertise in most factory-based training programs. If these are provided, it will not only require less time for training but also significantly increase the speed of skill development. Special attention should be paid to improving the teaching aspect of the programs. All organizations that provide informal education should establish close relationships with each other in order to organize training within a detailed planning framework and to contribute to economic development (BCA, 300 - 48 - 18-9).

34. There is also a need to organize national applications and identify training needs in various fields of art, to provide vocational guidance, to develop educational standards and art assessments, to establish art certification, to analyze educational costs, to monitor the status of educational tasks, to evaluate the effectiveness of education, and so on. There is a need for better collaboration between the Ministries of Industry, Labor, and Education on educational matters.

Future UNDP Assistance

35. The obligations of the Government defined in this document hold particular importance for the achievement of the project's objectives, and the continued participation of the UNDP in this project will depend on the timely fulfillment of these obligations.

Part II: Objectives of the Project

1. At the time the Milli Industrial Education Project was initiated, a BMKP country program had not been approved for Türkiye; however, funding for this project has now been included in the program.

A. Long-Term Goals

2. The long-term aim of the project is to assist the government in establishing a National Industrial Training Project to meet the manpower shortage that will arise as a result of the rapid economic development envisaged in Türkiye's development plans.

B. Urgent Purposes

3. Inspection of industrial training programs conducted by the Ministries of Education, Labor and Industry and private organizations.

4. To advise on the preparation and implementation of systems covering in-plant training and apprentice training.

5. To develop a National Industrial Training Center that will (a) analyze the labor market and identify the country's needs for qualified technical personnel in various art branches,

(b) develop programs to meet the needs of industry, and (c) establish educational standards and art tests related to art certification activities.

6. To train instructors in theoretical and technical subjects, workshop practices, and modern teaching. These instructors are needed in the six vocational training centers to be established in the following industrial zones, as well as in in-plant training programs. The locations of these centers, to be established with IBRD loan assistance, are as follows: Eskişehir (one); Istanbul (two); Bursa (one); Izmir (one); and Adana (one).

7. Evaluate and develop existing industrial training programs organized by various ministries and private institutions.

8. Provide consultancy services, advice, and active participation in the development of pre-employment and all other vocational training centers that will operate within the framework of the principles and programs to be developed by the project. Six IBRD pre-employment centers will be included in the above (BCA, 300-48-18-10).

Investment Potential:

This project may have investment potential, and a specific review of this issue will be conducted by the consultant as part of the project activities.

Part III Work Plan

Description of Project Activities

Subsequent field project implementation during the pre-implementation activities phase is planned to begin on January 1, 1973, and continue until approximately December 31, 1974.

Project Activities	Location:	Projected Duration and Start Date
1. Review of industrial training programs organized by the Ministries of Education, Labor, and Industry, and private institutions.	Ankara and major industrial centers.	The project duration and pre-implementation phase will begin in October 1972.
2. Recommendations will be made regarding the preparation and implementation of systems encompassing in-plant training and apprentice training.	Ankara - Ministries of Education and Industry	
3. Development of a National Industrial Training Development Center		15 months: April 1973 to June 1974.
4. Identification of the country's needs for trained technical personnel in various branches of industry.	Ankara Ministry of Labor	
5. Development of programs to meet the needs of industry.		16 months: January 1973 to April 1974.
6. Establishment of training standards and art tests	Ankara Ministry of Labor	
7. Training of trainers needed by the six IBRD and other industrial training centers in theory, workshop practice, and modern teaching methods through in-plant training.		16 months: January 1973 to April 1974
8. Assistance with design, layout, and equipment for the six IBRD Centers.	Ankara Industrial Education Development Center	
9. Assistance with the establishment of a Vocational Guidance Center.		Continuous from January 1973
	Same as above	
10. Assistance with the organization of training courses and the preparation of course programs and teaching materials for the six IBRD Centers.		Continuous from January 1973
	Ankara Ministry of Education	

Definition of UNDP Inputs

Assignment of International Personnel

13. Project Manager

In the performance of his/her duties, the Project Manager shall, in consultation with the Ministry of National Education as necessary,

- (a) be responsible for the detailed planning and implementation of the project, including the determination of the timeframe and budget for various activities and the preparation of technical reports;
- (b) assist in the selection of project counterpart personnel and auxiliary personnel, and in the selection of candidates for UNDP-funded scholarships, normally from among counterpart project personnel;
- (c) supervise counterpart personnel assigned to the project in matters of expertise and technical matters;
- (d) establish training standards and oversee the training of counterpart personnel in Türkiye.
- (e) assist the Government in the preparatory work necessary for the construction of a national vocational training project;
- (f) be accountable to the ILO for the local expenditure of all materials, equipment, vehicles, and funds procured for the project through the ILO;
- (g) Supervise the use of land, buildings, equipment, materials, and other property belonging to BHKP and granted or allocated to the project by the Government;
- (h) Coordinate the efforts of other organizations or project personnel associated with the project, if deemed necessary;
- (i) Perform any other duties within the scope of his/her competence as a vocational training specialist, and particularly as a person responsible for the training of instructors (BCA, 300-48-18-12).

Required Qualifications:

- (j) A sound general and technical education in one or more engineering disciplines;
- (k) Experience and responsibility in a responsible position in the industry following a solid and practical education;
- (l) Extensive experience in program development and the organization of resources for the training of industrial workers at various levels in various art disciplines;
- (m) Ability to plan, organize, and control the activities of others within a team;
- (n) Ability to perform the duties specified above.

14. Specialist in Educational Standards and Evaluation: The Specialist will develop educational standards, art tests, and art certification procedures; analyze the job content in art and industrial organizations to determine the form of educational standards that will meet the skill needs of the relevant art discipline; and, in collaboration with other specialists on the team, plan prototype art tests. The Specialist will arrive approximately on April 1, 1973, for a period of 15 months.

15. Specialist in Labor Market Analysis: To identify problems hindering the country's efforts to provide the trained technical personnel it needs, the Specialist will analyze labor market factors affecting the supply and demand of trained personnel, recommend possible policy measures that will assist in providing the trained technical personnel needed in Türkiye, and recommend possible policy measures. The Specialist will arrive on approximately January 10, 1973, for a period of 16 months.

16. Apprenticeship and In-Plant Training Specialist: The Specialist will promote, develop, and supervise all apprenticeship and in-plant training projects implemented in the industry and coordinate these with other training activities within the project program. He will, if necessary, draft rules and regulations covering the detailed implementation of the Industrial Training Law regarding apprenticeship and in-plant training. He will collaborate with other experts on the team to formulate curricula and other training materials for use in the in-plant training of apprentices and adults. The Specialist will arrive on approximately April 1, 1973, for a period of 15 months.

17. Specialist in Teaching Techniques: The Specialist will encourage, develop, and oversee the application of teaching techniques to industrial arts skills, along with the necessary theoretical knowledge on the subject. He/she will coordinate this work with other educational activities included in the project program. He/she will demonstrate modern teaching methods to current and prospective instructors and supervisors charged with this responsibility, and will particularly guide and advise them on how to utilize the training tools and equipment. The Specialist will arrive approximately on April 1, 1973, for a period of 15 months.

18. Specialist in Engine Mechanics: The Specialist will oversee the Project's in-school and in-plant engine mechanics training activities, coordinating them with training in other skill branches within the project. Working with any national advisory board or art committee that may be requested to serve, he/she will examine both current and projected job models encompassing the industrial sector's engine mechanics (gasoline, diesel, and electric) branch, and identify job profiles for various occupational levels that will guide the required training. The expert will arrive on approximately May 1, 1973, for a period of 15 months (BCA, 300-48 – 18-13).

19. Expert in Equipment Planning, Procurement, Delivery, and Administration: The expert will oversee the program's equipment planning, procurement, delivery, and administration activities, coordinating them with other project activities. He/she will examine the intended roles of the training centers to be established with the assistance of the International Bank for Reconstruction and Development (IBRD) in terms of the types and levels of skills to be taught, and will determine the most appropriate quantity and category of equipment required for this purpose. This examination should be conducted in collaboration with other members of the international team assigned to this project and in collaboration with any national advisory board or art committee interested in vocational training in the country. The expert will arrive on approximately January 1, 1973, for a period of 12 months.

20. Electronics Specialist: The Specialist will oversee both in-school and in-factory electronics training activities for the project, coordinating them with training in other skill branches within the project. Working with any national advisory board or art committee that may be asked to serve, the Specialist will examine both current and projected business models encompassing the applied electronics sector of the industry, including radio and television maintenance and repair, and identify job profiles for various occupations at various levels that will guide the training required. The Specialist will arrive approximately May 1, 1973, for a period of 15 months.

21. Tool and Mold Making Specialist: The Specialist will oversee the project's in-school and in-plant tool and mold making and machine shop training activities, coordinating this with training in other skill branches within the project. Working with any national advisory boards or art committees on which he or she may be asked to serve, he or she will examine both current and projected work patterns across industry sectors and in die making and machine shop operations, and will identify job profiles for various occupational levels that will guide the training required. The Specialist will arrive approximately January 1, 1973, for a period of 15 months.

22. Foundry Specialist: The Specialist will oversee the project's in-school and in-plant training activities related to foundry work, coordinating these with training in other skill branches within the project. He/she will collaborate with any national advisory board or art committee that may be asked to serve. He/she will examine both existing and projected business models encompassing the foundry sector of the industry and identify job profiles for various occupations that will guide the training required from this. The Specialist will arrive approximately May 1, 1973, for a 15-month period.

22A. Consultants: A total of eleven man-months of consultancy services are envisaged in the areas of Vocational Guidance and Welding, and sheet metal, and these consultants are expected to arrive approximately September 1, 1973. 23. Educational Opportunities: A total of 19 trainees, 120 per month, will be sent abroad for training at institutions where education is provided in English, to begin on September 1, 1973. Scholarships will be awarded to individuals selected from among

counterpart personnel who meet the language requirements of the countries they will be attending (BCA, 300 - 48 - 18-14).

Scholarships	Start Date	Duration	Location:
1. E6-Mer en	January 1, 1974	12 months	England and Turin
2 and 3. Educational Standards and Assessment	September 1, 1973 and April 1, 1974	6 months each	"
4 and 5. Labor Market Analysis	September 1, 1973 and April 1, 1974	6 "	"USA
6 and 7. Apprenticeship and In-Plant Training	September 1, 1973 and April 1, 1974	6 "	"
8 and 9. Teaching Techniques	September 1, 1973 and April 1, 1974	6 "	"
10 and 11. Engine Mechanics	September 1, 1973 and April 1, 1974	6 "	"
12 and 13. Equipment Planning, Procurement, and Management	September 1, 1973 and April 1, 1974	6 "	"
14 and 15. Electromechanics	September 1, 1973 and April 1, 1974	6 "	"
16 and 17. Tool and Mold Making	September 1, 1973 and April 1, 1974	6 "	"
18 Foundry Business	September 1, 1973 and April 1, 1974	6 months	"
19 Model Making	September 1, 1973 and April 1, 1974	6 months	"

Scholarships may be subject to change based on the applicant's language proficiency. The candidate's academic and/or technical level must be accurately determined to ensure they receive appropriate training.

Equipment and Materials Provided by UNDP

(I) Audio-Visual Equipment and Location Other Training Tools and Materials (40,000%)		Delivery Date	Cost
(a) Expendable Equipment	Ankara	From April 1, 1973	a) 10,000
(b) Non-expendable Equipment		From October 1972	b) 30,000
(II) Office Equipment			4,000
	Ankara		
(iii) Project Vehicles - Four (4)	Ankara	October 1972	
(a) Peugeot 504 Station Wagon	Ankara	April 1973	3,000
(b) Ford Station Wagon	Ankara	June 1973	3,000
(c) Ford Station Wagon		June 1973	3,000
(d) Fard Station Wagon			3,000
(IV) Support Staff	Ankara	June 1973	
(a) Secretary	Ankara		Equipment
(b) Driver (4)			Total.....
(c) Interpreter		June 1, 1972	56,000 (BCA, 300-48-18-15)
		October 1, 1972	7,500
		April 1, 1973	3,320
		June 1, 1974	2,560
(v) Installations for sub-contractor services; None			2,310

24. Description of Government Inputs:

The Government will contribute the following:

(a) Land and Facilities: The Ankara Vocational Training Center and its facilities, well equipped and inspected for use in the Project, will be provided.

Land and Buildings: 16,650.00 TL. The buildings and equipment will be available starting May 1, 1972.

(b) Project Personnel: Professional counterpart and other support personnel will be provided as follows: (For the two-year duration of the Project):

Professional counterpart personnel cost: 2,154,600 TL.

Support personnel cost: 356,136 TL.

The Government will take all necessary administrative and financial measures, within the available facilities provided for existing personnel, as indicated in the relevant table on page thirty-nine. This will enable Turkish counterpart personnel to fully contribute to project activities.

	Number	Period	Date	Place
April 48	April 1	Ankara	April 1/ 1973	Ankara
	/1973			
Contractors, Education Standards	2	48	"	"
	2	48	"	"
Evaluation	2	48	"	"
	2	48	"	"
Labor Market Analysis	2	48	"	"
	2	48	"	"
Apprenticeship and In-Plant	2	48	"	"
	2	48	"	"
Education	2	48	"	"
	2	48	"	"
Education	2	48	"	"
	2	48	"	"(BCA,300-48-18-16)
Education Techniques				
	2	48 April/month	April 1 / 1973	Ankara
Engine Mechanics	2	48	April1 /1973	Ankara
	1	24	April 1 /1973	Ankara
Equipment Planning, Procurement, Shipping, and Administration	2	48	April 1 /1973	Ankara
	1	24	April 1 /1973	Ankara
Electronics	1	24	April 1 /1973	Ankara
		24	April 1 /1973	Ankara

Scholarships:

Salaries that can be paid to personnel temporarily assigned to replace contra-partite personnel who have left on scholarship (as specified in Article 30 of the Project budget.

Scholarships: 120 people/month - 574,560 TL.

(d) Equipment:

As currently installed in the workshops of the Ankara Vocational Training Center. Value: 9,495,000 TL. For expendable equipment and consumables: 711,000 TL.

(e) Miscellaneous:

I. Importation, customs clearance, transportation, storage, and related expenses (such as in-country insurance) of project equipment.

II. Operation and maintenance expenses of the equipment referred to in paragraph (d): 711,000 TL.

III. Unforeseen miscellaneous expenses, totaling 300,000 TL. This includes a cash contribution of 250,000 TL. Cash The contribution to the project will be provided as follows:

a) On April 1, 1973 - 125,000 TL.

b) On April 1, 1974 - 125,000 TL.

These amounts will be deposited into the UNDP's contribution account number 640/224 at the Ottoman Bank Headquarters, Ankara.

25. Work Schedule

ACTIVITY	1972	1973	1974
Analyzing the training programs of ministries and private institutions. Providing advice on the preparation and implementation of systems encompassing in-plant training and apprentice training.			
Developing a National Industrial Training Development Center (BCA, 300 - 48 - 18-17).			
Determining the country's needs for trained technical personnel in various art branches. Developing programs to meet the needs of industry.			
Establishing educational standards and art tests.			
Training instructors in theory and workshop practice and modern teaching methods.			
Assisting six IBRD Centers with design, site planning, and equipment. Assisting in the establishment of a Vocational Guidance Center.			

UNDP Inputs

Project Manager

Experts:

Educational Standards and Assessment Experts: Educational Standards and Assessment Labor
Market Analysis Apprenticeship and In-Plant Training Teaching Techniques Engine Mechanics
Equipment Planning, Procurement, and Administration (BCA, 300 - 48 - 18-19)

Electronics,
Tool and Mold Making,
Foundry Business,
Consulting Scholarships
Co-Manager 12 people/month
Contrast Parts (9) 54/month Contrast Parts (9) 54
Audio-Visual and Supplies
Office Equipment

Project Vehicles

(I) Pengeot 504 station wagon
(II) Ford station wagon
(III) Ford station wagon
(IV) Ford station wagon

Support Personnel

Secretary
Translator
Drivers (I), (II), (III), (IV)
Government Inputs
Buildings and Equipment
Contract Furniture
Support Personnel
Cash Wrap (as shown in Miscellaneous)

In the fiscal year
73/74 In the
fiscal year
74/75 (BCA,
300-48-18-20)

PART IV -

Project Budget PROJECT BUDGET INCLUDING UNDP CONTRIBUTION (in US Dollars)

COUNTRY: Türkiye PROJECT NO: TUR/71/536/B/01/11

NAME: National Industrial Education Project

10. Project Personnel	Total	1972	1973	1974
11. Experts	i/a \$	i/a \$	i/a \$	i/a \$
	33 82.500	9 22.500	13 30.000	17 50.000
11.01. Project Manager	15 37.500		9 22.500	6 15.000
11.02. Educational Standards and Evaluation	16 40.000		12 30.000	4 10.000
11.03. Labor Market Analysis	15 37.500		9 22.500	6 15.000
11.04. Apprenticeship-In-Plant Training	15 37.500		8 20.000	7 17.500
11.05. Teaching Techniques	12 30.000		12 30.000	
11.06. Engine Engineering	15 37.500		8 20.000	7 17.500
11.07. Material Planning, Procurement, and Shipping Management	15 37.500		12 30.000	3 7.500
11.08. Electronics	15 37.500		8 20.000	7 17.500
11.09. Tool and Mold Making	11 27.500		8 20.000	3 7.500
11.10. Foundry Business	177 442.500	9 22.500	107 267.500	61 152.500
11.11. Consultants	24.00	2.000	10.400	11.600
11.99TOTAL (Experts)	466.500	24.500	277.900	164.100

PROJECT BUDGET-GOVERNMENT CONTRIBUTION (In Turkish Lira) (BCA, 300 - 48 - 18-22)

10. Project Personnel	i/a	Total Cost	i/a	1973/74 Cost	i/a	1974/75 Cost
Co-Manager	24	126.000	12	63.000	12	63.000
Contraption Training Standards and Assessment	24	126.000	12	63.000	12	63.000
Contraption Labor Market Analysis "	24	92.400	12	46.200	12	46.200
Contraption Apprenticeship/In-Plant Training "	24	92.400	12	46.200	12	46.200
Contraption Teaching Techniques "	24	109.200	12	54.600	12	54.600
Contraption Engine Mechanics "	24	109.200	12	54.600	12	54.600
Contraption Equipment Planning, Procurement, and Shipment Management "	24	92.400	12	46.200	12	46.200
Contraption Electronics "	24	92.400	12	46.200	12	46.200
Contraption Tool and Mold Making "	24	109.200	12	54.600	12	54.600
Contraption Foundry "	24	109.200	12	54.200	12	54.600
Contraption Foundry "	24	92.400	12	46.200	12	46.200
TOTAL Professional Personnel	456	1.890.000	228	945.000	228	945.000
Social Security (14%)		246.600		132,300		132.300

SECTION TOTAL	456	2.154.600	228	1.077.300	228	1.077.300(BCA, 300 - 48 - 18-23)
PROJECT BUDGET-GOVERNMENT CONTRIBUTION (Continued)						
	Total	1972	1973/74	1974/75		
40. Equipment						
41. Expendable Equipment	711.000	--	355.500	355.500		
42. Non-Expendable Equipment	9.495.000	9.495.000				
43. Offices	16.650.000	16.650.000				
49. Section Total	26.856.000	26.145.000	355.500	355.500		
50. Miscellaneous						
51. Equipment Operation and Maintenance	711.000	--	355.500	355.500		
53. Miscellaneous	300.000	--	160.000	140.000		
59. Section Total	1.011.000	--	515.500	495.500		
99. Grand Total	30.952.296	26.145.000	2.413.648	2.393.648(BCA,300-48-18-24)		

Y- PROJECT ORGANIZATION

General Responsibilities

1. The Government, UNDP, and the Implementing Agency will be collectively responsible for the implementation of the project and the achievement of the objectives defined in Section II of this project document.
2. The Government will designate the Government's Collaborating Agency, hereinafter referred to as the "Collaborating Agency," which will provide national project personnel, training facilities, land, buildings, equipment, and other necessary services and facilities to the project. The agency will be directly responsible for the implementation of the Government's contribution to the project.
3. The UNDP will complement the Government's participation, but will also make additional contributions and will provide the necessary expertise, training, equipment, and other services through the Implementing Agency, within the funds allocated to the project.
4. Following project commencement, the Implementing Agency may be asked to assume primary responsibility for project implementation. However, such a responsibility will be implemented after the necessary consultation and agreement with the Cooperating Agency. Arrangements regarding both this matter and the transfer of this responsibility to the Government or an organization designated by the Government during the project implementation phase will be specified in the project's Work Plan.
5. A portion of the government contribution may be in the form of cash payments to UNDP. In such a case, the Implementing Agency will provide the relevant services and facilities and will account annually to UNDP and the Government for the expenditure of the cash contribution.

Government Participation

6. The Government will provide project services, equipment, and facilities to the project in the amounts and at the times specified in the work plan. Measures related to the Government's participation, whether in kind or in cash, will be specified in the Project budgets.
7. The Collaborating Agency, after consultation with the Implementing Agency, will appoint a full-time project co-manager for the project. The project co-manager will assume the responsibilities assigned to him or her by the Collaborating Agency.
8. The estimated costs of the items included in the Government contribution detailed in the Project Budget should be based on the best information available at the time of writing this project proposal. Price fluctuations that will occur during project implementation may necessitate an adjustment to the monetary aspect of the contribution; such adjustment will in any case be determined based on the value of the services, equipment, and facilities necessary for the proper implementation of the project.

9. The Government may make minor adjustments to individual project personnel assignments, provided that the total number of personnel services provided by the Government does not exceed the total number of person-days defined in the Work Plan, in consultation with the Implementing Agency, and if deemed to be in the best interest of the project.

10. The Government will continue to pay the salaries and allowances of national project personnel receiving UNDP scholarships while they are abroad and away from the project (BCA, 300 -48-18-25).

11. The Government will cover the duties and other expenses related to the clearance of project equipment from customs, their transportation, forwarding, and storage, and any other expenses incurred within the country. Following delivery of the equipment at the project site, the Government will be responsible for its storage, installation, maintenance, insurance, and, if necessary, replacement.

12. The Government will provide the project with any published or unpublished reports, maps, records, and other information deemed necessary for project implementation, provided that such information is not deemed to be a security hazard.

13. The Government will assist all project personnel in finding suitable housing at a reasonable rent.

14. The services and facilities specified in the Work Plan, which will be provided by the Government to the project through cash contributions, will be specified in the Project Budget. This amount will be paid to UNDP in Turkish Lira in accordance with the Government Payments Schedule.

15. Payment of the above-mentioned contribution by the Government to UNDP on or before the date specified in the Schedule of Payments is a prerequisite for the commencement or continuation of project implementation.

Participation of UNDP and Implementing Agency:

16. The services, equipment, and facilities defined in the UNDP Work Plan will be provided to the project through the Implementing Agency. Budgetary measures related to UNDP contributions will be specified in the project budget.

17. The Implementing Agency will consult with the Government regarding the nomination of the Project Manager, who will be responsible for participating in the project in this country under its management. The Project Manager will oversee the on-the-job training of experts and other agency personnel assigned to the project, as well as national project personnel, and will be responsible for the delivery and management of all materials provided for the project from UNDP funds.

18. The Implementing Agency will, in consultation with the Government/Work Plan, assign international and other personnel to the project, select candidates for scholarships, and determine the training/standards for national project personnel.

19. Scholarships will be awarded in accordance with the Implementing Agency's regulations regarding scholarships.

20. After reaching agreement with the Government and UNDP, the Implementing Agency may implement part or all of the project through subcontracts. The selection of subcontracts shall be made in accordance with the Implementing Agency's procedures after consultation with the Government.

21. All supplies, equipment, and materials purchased with UNDP resources shall be used exclusively for project implementation and shall remain UNDP property and shall be marked with the Implementing Agency's symbols on its behalf.

22. Arrangements may be made for the temporary transfer of equipment to local authorities during the project period, and as necessary, without prejudice to final handover.

23. Before UNDP assistance to the project is completed, the Government, UNDP, and the Implementing Agency will hold consultations to decide what to do with all project equipment provided by UNDP. Normally, ownership of such equipment will be transferred to the Government or, where necessary for the continuation of the project or for activities directly arising from it, to an entity designated by the Government. However, UNDP may decide to retain ownership of some or all of this equipment (BCA, 300-48-18-26).

24. At an agreed date following the completion of UNDP assistance to the project, the Government, UNDP, and, if necessary, the Implementing Agency will review the activities continuing from or resulting from the project to assess the project's results.

Conveniences, Privileges, and Immunities

25. In accordance with the agreement between the UNDP and the Government regarding the provision of assistance, the personnel of the UNDP and United Nations Agencies shall benefit from the facilities, privileges, and immunities specified in the said agreement.

Subcontractors and Personnel

26. Contractors and personnel of the implementing agency (excluding locally employed Turkish national personnel) shall be exempt from: a) legal prosecution for any acts undertaken in their official capacity during the implementation of the project; b) military service; c) They, their spouses, and their dependents shall be exempt from communication restrictions; d) They shall be exempt from the necessary privileges to bring reasonable amounts of foreign currency into Türkiye for project purposes or for the personal expenses of such personnel and to withdraw any portion of the currency brought into Türkiye or any amounts earned by personnel present for the implementation of the project in accordance with the relevant foreign exchange regulations; e) In the event of an international crisis, they, their spouses, or their dependents will be repatriated to their home countries with the same facilities granted to diplomats.

27. All contractor personnel of the Implementing Agency will be granted the right of ineligibility for all project papers and documents.

28. The Government shall,

(a) Pay or salary earned by such foreign personnel in the implementation of the Project;

(b) Equipment, supplies, and materials brought into the country or withdrawn from the country after being brought there for Project purposes;

(c) Equipment, supplies, and materials procured locally in significant quantities, such as gasoline and spare parts, for the operation or maintenance of the materials specified in (b) above for the implementation of the Project (provided that the types to be exempted, the approximate quantities, and the procedures to be followed will be agreed upon with the Government and recorded in the Work Plan as appropriate).

(d) Exempt from taxes, customs, duties, fees, etc. levied on any foreign firm or organization, the Implementing Agency, or the personnel of such a foreign firm or organization, or reimburse them in kind, for any such payments, including the privileges granted to UNDP and Implementing Agency personnel, and any goods brought for use or consumption by officials, firms, organizations, or their personnel, including one private passenger car per official. 29. The Implementing Agency or UNDP may revoke the immunities and privileges granted to such firms or organizations and their personnel, as referred to in the above paragraphs, in cases where such action constitutes an impediment to the administration of justice, provided that such action does not prejudice the successful completion of the project or the interests of UNDP or the Implementing Agency. 30. The Implementing Agency shall submit to the Government, through the Permanent Representatives of

the United Nations Development Programme in Türkiye, a list of personnel who will benefit from the aforementioned privileges and immunities (BCA, 300-48-18-27).

Furthermore, within the scope of this project, the Materials Research Unit of the Marmara Scientific and Industrial Research Institute, affiliated with TÜBİTAK, is expected to receive \$599,000 in annual aid for three years (BCA, 314-32-7). The National Industrial Education Project, planned to be implemented within the framework of the United Nations Development Programme and in cooperation with the International Labour Organization (ILO), requires the employment of personnel needed in various specialized fields on a contract basis (BCA, 333-37-14-3). Contract experts have been recruited for this project (BCA, 323-77-4-1). These experts have been assigned to the Directorate of Technical Education for Men (BCA, 323-77-4-3). The gross monthly salary (BCA, 323-77-4-1) is 7,000 TL. The education standards and evaluation specialist is paid 7,000 TL. A labor market specialist and a tool and mold making specialist were hired for a fee of 8,000 TL (BCA, 323 - 77 - 4-2). These assignments were expected to begin on 01.03.1975 and end on 29.02.1976 (BCA, 333 - 37 - 14-2). Sample resumes were prepared for these specialists (BCA, 333 - 37 - 14).

CONCLUSION

The need for a qualified workforce, one of the most crucial stages of production processes, has been a significant problem for countries since the Industrial Revolution. Therefore, manpower planning has forced countries to adjust their educational programs to include vocational training. The major disasters that emerged after World War II—famine, poverty, and loss of human life—have further increased the importance of this issue. Countries such as the United States, Japan, Norway, and the United Kingdom have implemented regulations for vocational training and in-factory training at the primary, secondary, and higher education levels.

Before the declaration of the Republic in Türkiye, the Izmir Economic Congress convened on February 17, 1922, highlighted the importance of vocational training. Craft and art schools inherited from the Ottoman era were not closed, but new ones were opened. While the establishment of vocational schools was initially under the control of municipalities, these schools were later transferred to the Ministry of Education. Significant steps were taken in the field of vocational training in the 1960s. In 1972, a detailed project on vocational training was prepared in the Third Five-Year Development Plan. The plan, envisioned for implementation from 1972 to 1977, cited the need to meet the needs of intermediate personnel in non-agricultural sectors as the justification. The "National Industrial Training Center Project" was developed within the framework of the United Nations Development Plan for Underdeveloped Countries. According to this program, Türkiye would cover a portion of the project's costs, while the BKMP would cover the remaining portion. Courses were opened in provinces such as Istanbul, Ankara, Adana, and Izmir. Furthermore, within the framework of this plan, a preliminary study was prepared to determine the number of personnel needed in each field and the type of training required. Training was planned within the framework of these sectors. Courses were offered in model making, engine mechanics, foundry, tool and mold making, and so on. It was stated that scholarships would be provided to trainees. Sample resumes were prepared for scholarship holders. It was stated that the United Nations would maintain a permanent representative in Türkiye to implement the program.

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Pre-service Teachers' Conceptions of Rectangle-Parallelogram Hierarchy via Erroneous Examples

Seda ŞAHİN¹

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Abstract

This case study investigates how pre-service mathematics teachers conceptualize the hierarchical relation between rectangles and parallelograms when confronted with an erroneous example. Participants were 90 second and third-year students enrolled in an elementary mathematics education programme at a Turkish state university. Data consisted of (i) the participants' written evaluations of the erroneous example and (ii) alternative tasks they designed for the same learning outcome; both sets were analysed through content analysis. Findings indicate that only 13 % of the participants possessed sufficient conceptual knowledge to identify the error and propose a valid task. A further 64 % failed to detect the error, and 59 % of these reproduced tasks containing similar misconceptions. The study demonstrates that erroneous examples can serve not only as a pedagogical tool in teacher education but also as a diagnostic lens for revealing concept-image versus concept-definition gaps. Most participants' understanding that "a rectangle is a special parallelogram" was grounded in visual perception rather than formal properties.

Keywords: erroneous examples, quadrilaterals, rectangle, parallelogram

¹ Asst. Prof. Dr., Kilis 7 Aralık University, Kilis, Türkiye; e-mail: seda.sahin@kilis.edu.tr ; ORCID: 0000-0003-3202-8852

INTRODUCTION

Errors, which have a deep history in educational research, are seen as a natural part of the learning process and the role of error in this process is handled in different ways. In the perspective dominated by the behavioral theory, error is considered as a factor that should be avoided and prevents learning. According to this theory, errors should be avoided as much as possible since learning is a process of acquiring new behaviors, not new ideas, and errors only lead to wrong answers. Although errors are not allowed to occur in the learning process, if students make mistakes, these mistakes should be eliminated by repeating the rules for the correct answer without creating a discussion environment (Skinner, 1958 cited in Santagata, 2005). In the constructivist approach, errors have an important place in the construction of knowledge (Ding, 2007; Nesher, 1987; Santagata, 2005; von Glasersfeld, 1989). It is important to use errors as a tool to understand how students think and to intervene correctly when errors are encountered (Ding, 2007; von Glasersfeld, 1989). The basis of correct intervention is questioning student errors, examining students' perceptions of concepts, and criticizing their and their peers' thinking (Borasi, 1994).

When the studies on student errors in mathematics teaching are examined, it is seen that they mostly focus on detecting errors, determining the types and causes of errors, and eliminating them. In the studies that consider error as a learning tool, student errors encountered in classroom practices and teacher reactions and interventions to these errors were examined (e.g. Hansen, 2011; Gardee & Brodie, 2022; Santagata, 2005; Sahin, 2011). Teachers may avoid or ignore errors because they do not see errors as important tools for learning, or fear that errors may be 'contagious' (Swan, 2002, p. 151). Most of the time, teachers correct errors in order to guide students to the correct information. Teachers who own up to the errors, on the other hand, use errors as a special tool to produce knowledge. According to this approach, error plays an important role in the construction of knowledge. Error exploration is

important for teachers who try to understand how students understand and think, and these teachers investigate errors to uncover the underlying understandings (Brodie & Shalem, 2011; Gardee & Brodie, 2015). However, in order to turn an error into an opportunity, the error needs to occur. However, in order to use error as an effective learning tool, it is not enough just to wait for it to occur. In the literature, errors are referred to by various terms depending on researchers' preferences, such as *erroneous examples* (Tsovaltzi et al., 2010), *mistake-handling tasks* (Heinze, 2005), or *error-based tasks* (Gürbüz et al., 2021). Despite these different labels, they share the same conceptual meaning. Erroneous examples refer to a completed solution or evaluation that contains one or more mistakes (Tsovaltzi et al., 2010). The primary aim is to enhance students' conceptual understanding by encouraging them to identify and correct the error(s) in the worked examples (Tsovaltzi et al., 2010; Heinze, 2005). On the contrary, students should be consciously confronted with erroneous examples. Researchers (e.g. Akkuşçi, 2019; Heinze, 2005) who advocate this view and conduct studies in this field focus on the realization of the learning process through well-organized erroneous examples. More effective learning can be achieved by providing students with an environment where they can analyze and discuss the error. Errors can stimulate students' curiosity by creating a contrast with the expected situation and allow them to think about different alternatives. The analysis of errors enables the discussion of more abstract topics, concepts or content, making them more concrete and therefore accessible to students (Borasi, 1989). In addition, truly learning a concept or topic requires knowing what is wrong as well as what is right (Heinze, 2005). From this point of view, mistakes are not only opportunities that support learning but also a part of the learning process (Heinze, 2005). In fact, studies have shown that creating a discussion environment on mistakes in a planned way rather than discussing individual errors in the classroom provides a better learning opportunity (Heinze, 2005). Including erroneous examples as well as correct examples in teaching contributes positively to students' conceptual knowledge (Durkin & Rittle-Johnson, 2012; Hansen, 2011; Gürbüz et al., 2021). Durkin and Rittle-Johnson (2012) found that students who were asked to compare correct and incorrect examples while placing decimals on the number line in the fourth and fifth grades understood the subject better than the group that was taught only with correct examples. In their experimental study, Gürbüz et al. (2021) concluded that error-based tasks had an effective role in teaching measures of central tendency and line graphs to seventh grade students. In studies in which students' prior knowledge is considered to be a determining factor for the

effective use of error-based examples (e.g. Große & Renkl, 2007; Gürbüz et al., 2021), it is argued that students whose prior knowledge is weak or inadequate do not know how to interpret error-based examples and therefore error-based examples are not an effective tool for the conceptual development of these students. Durkin (2012) states that misconceptions, rather than incomplete prior knowledge, prevent students from interpreting and analyzing errors.

Erroneous examples are not only a learning opportunity for students, they also provide opportunities for teachers and pre-service teachers. Watson and Jason (2007) point out the important role of examining and analyzing text-based tasks in particular to examine pedagogical and didactic issues and to stimulate thinking. Moreover, tasks involving student errors are an effective pedagogical tool for teachers and pre-service teachers to focus on student thinking and possible sources of errors (Biza et al., 2007; Zaslavsky & Sullivan, 2011). Teachers' pedagogical perspectives can be determined through tasks consisting of scenarios involving errors made by students (Ma, 1999; Biza et al., 2007; Bütün, 2005, 2011). The pre-service teachers' exposure to error scenarios before moving to the real classroom environment will enable them to be prepared for possible student difficulties and gain pedagogical knowledge that will determine the way to handle the error (Biza et al., 2007; Mason, 1998). Watson and Jason (2007) reviewed 111 studies on the role of tasks in teacher education (submitted for a special issue of the journal they edited) and found that the purposes of using tasks were concentrated under three headings: a. Understanding students' mathematical knowledge; b. Developing teachers' mathematical awareness (rethinking their views of mathematics or re-experiencing mathematics learning); c. Considering the different mathematical opportunities offered by different ways of teaching. In the studies where teachers were asked to examine or compare different tasks or different pedagogical strategies, it can be argued that these studies provide more information about the importance of the role of tasks in teacher education than the first two purposes.

Teachers face complex situations in their classroom practices that require them to make decisions and choices (Zaslavsky & Sullivan, 2011). Students' difficulties are one of the complex situations that teachers have to deal with and teachers should know how to intervene when they encounter such situations (Ma, 1999; Zaslavsky & Sullivan, 2011). The right intervention is directly related to the teacher's subject matter knowledge and pedagogical content knowledge. For teachers to acquire these competencies on the basis of student difficulties, it is important for them to encounter situations that create uncertainty and even confusion, just like students (Leinhardt, 2001; Zaslavsky & Sullivan, 2011). Such situations have the power to make teachers question their knowledge and provide productive explanations (Leinhardt, 2001). Scenarios involving student errors are frequently used for these purposes (e.g., Ma, 1999; Bütün, 2011).

Scenarios involving student errors are used in determining the content knowledge or pedagogical content knowledge of teachers and pre-service teachers or in the process of providing these competencies to pre-service teachers (e.g., Ma, 1999; Bütün, 2011). In such studies, teachers/pre-service teachers are asked to identify student difficulties by giving scenarios with student responses taken from the real classroom environment or designed in a realistic way, and their opinions about how they can intervene in such a situation or what can be done to prevent these difficulties are asked. When the related literature was examined, it was found that there was no use of the erroneous example scenarios for a teacher's practice. In this study, the erroneous example is not a student task but a teacher's in-class practice. Such teacher practice tasks provide an opportunity to determine both the knowledge and pedagogical approaches of teachers and prospective teachers.

It suggests that the studies in the literature may be consistent within themselves, but more studies are needed for generalizable results. In general, it can be said that the research on errors as a learning tool remains in the background compared to other subject areas (such as prevention, detection, intervention). Therefore, more studies are needed in this field to determine the place and effect of "error" in mathematics teaching.

The Relationship between Geometric Shapes and Conceptual Properties of Shapes

Geometry learning is considered a challenging process for many students as it requires the use of abstract thinking skills such as spatial reasoning, proof making and problem solving. One of the common results of the studies examining the difficulties experienced in defining geometric shapes and determining their distinctive features is the dominance of prototype shapes for the concept in students' perceptions (Ulusoy & Çakıroğlu, 2017; Fischbein, 1993; Tall & Vinner, 1981). The inability to establish a healthy spatial and logical relationship between shape and concept in geometry is the basis of these difficulties (Tall & Vinner, 1981; Fujita & Jones, 2007; Duval, 1995).

Knowing the definition of a concept does not always mean that the concept is understood (Vinner, 1991; de Villiers, 1998). For example, a student may not accept a square, rectangle and rhombus as a parallelogram even though he/she defines parallelogram correctly. Tall and Vinner (1981) emphasize concept image in explaining this situation. Concept image is defined as the nonverbal expressions formed in our minds about a concept. These expressions can be a visual representation, impression or experiences related to the concept (Tall & Vinner, 1981). According to them, the reason why a student does not accept the quadrilaterals mentioned above as parallelograms is that these quadrilaterals do not match the concept image of parallelogram in his/her mind. Although, according to Vinner (1983), an individual considers the concept image rather than the definition when dealing with concepts, one of the reasons for the failure to establish a relationship between geometric concepts is that definitions are not given enough importance. Students who do not know the formal definition produce intuitive answers according to the concept images in their minds (Ubuz & Gökbulut, 2015). Although students are not expected to provide the formal definition directly, they can be guided to the definition by exemplifying the logical relationships between the situations related to the concept (de Villiers, 1998; Ubuz & Gökbulut, 2015). Therefore, it is important for students to be as active in the process of defining concepts as they are in learning tasks such as problem solving, predicting, and proving (de Villiers, 1998). Concept images have a decisive role in the formation of conceptual infrastructure (Vinner, 1983). The standardized representation of geometric shapes in the lessons causes students' concept images to be limited and to have a limited perception of the concept. Therefore, this situation prevents the desired flexibility in the process of defining the concept.

In many studies examining pre-service teachers' understanding of geometric shapes, conceptual properties of shapes, and the hierarchical relationship between shapes, participants are usually first asked to define quadrilaterals (such as square, rhombus, rectangle, and parallelogram). One of the common results obtained from these studies is that although the participants correctly identified quadrilaterals, they failed to identify parallelograms in terms of shape. Sahin (2023) examined the relationship between pre-service mathematics teachers' conceptual definitions and formal representations of rectangles and parallelograms and found that the number of participants who were able to combine the formal definition of the concepts and the appropriate formal representation was quite low. Toluk, Olkun, and Durmuş (2002), in their study in which they tried to determine the geometry levels of pre-service teachers, found that although most of the pre-service primary school teachers saw the relationship between rectangle and parallelogram, they could not decide which one was higher in the hierarchical structure. The researchers stated that such a difficulty was experienced because the mathematics program emphasized the names and definitions of geometric shapes and did not include enough tasks for establishing relationships between shapes. Similarly, Fujita and Jones (2006) found that pre-service primary school teachers had difficulty in establishing the hierarchical relationship between quadrilaterals although they could define them conceptually. They stated that the result they obtained was due to the gap between individuals' personal concepts (shape knowledge) and formal definitions (concept knowledge). This result is generalizable for similar studies conducted with the participation of students, pre-service teachers or teachers. In general, individuals' shape knowledge (concept image) has a dominant role in making formal definitions.

In studies examining how individuals perceive the definition of geometric shapes and the relationship between these shapes, it is seen that the formal and informal knowledge of the individual is generally examined through direct questions (e.g. Fujita & Jones, 2006; Gal & Lew, 2008; Horzum, 2018; Karakuş & Erşen, 2016; Toluk et al. 2002). Horzum (2018) asked pre-service mathematics teachers to

demonstrate their knowledge about quadrilaterals and the relationship between them by creating a concept map. Toluk et al. (2002), while questioning the participants' knowledge about the relationship between geometric shapes, asked them, "What kind of relationship is there between an isosceles triangle and an equilateral triangle? Which one includes which one? Why? Fujita and Jones (2006) asked pre-service teachers questions such as Is a square a rectangle? Is a rectangle a trapezoid? They asked them to explain their answers with reasons.

As in the studies discussed above, it is possible to reveal participants' views on the relationship between polygons by using concept maps and open-ended questions. However, the results obtained from such studies may not be a direct indicator of how the participants will evaluate when they encounter a new situation, especially an erroneous example. Considering the role of erroneous examples in conceptual learning, the purpose of this study was determined as "To examine pre-service mathematics teachers' understanding of rectangle as a special case of parallelogram through erroneous examples". In line with this purpose, the study has three sub-research questions:

- Pre-service mathematics teachers emphasize that "Rectangle is a special case of parallelogram." How do they evaluate the task with the erroneous example for the outcome?
- Pre-service mathematics teachers emphasize that "Rectangle is a special case of parallelogram." What kind of alternative task do they offer for the outcome?
- What is the relationship between pre-service mathematics teachers' evaluation of the erroneous example and the tasks they suggest?

The first sub-research question aimed to determine how the pre-service teachers interpreted the erroneous example, the second question aimed to determine how they would propose a task for the related outcome in line with the answer they gave to the first question, and the third question aimed to determine whether the tasks they proposed were consistent with the results of their evaluation of the erroneous example.

Although previous research has predominantly focused on the impact of erroneous examples on students' conceptual understanding, there has been limited investigation into how pre-service teachers analyze such examples or what tendencies they exhibit when constructing similar tasks. In this context, it is essential not only to examine how pre-service teachers evaluate erroneous examples, but also to explore how they generate alternative tasks in response to these examples. Investigating the consistency between these two processes would address a significant gap in the literature.

METHOD

This study is a case study conducted with the participation of 90 (63 female; 27 male) students studying in the Department of Elementary Mathematics Teaching at a state university in Türkiye. Case studies are a research strategy in which researchers conduct an in-depth investigation of an event, process, or one or more individuals (Creswell, 2015). In the present study, the participants were second and third-year undergraduate students, and the data were collected at the beginning of the fall semester. Therefore, none of the participants had yet taken a course on geometry instruction at the undergraduate level. The selection of participants was not purposive; this information is provided solely to support an accurate interpretation of the data. To ensure confidentiality, participants were coded as S1, S2, and so on.

The data collection tool used in the study was a two-stage form that required the evaluation of the erroneous example and the design of a task for the relevant outcome (Figure 1).

The Grade 6 task prepared using dynamic geometry software for the outcome "It is emphasized that the rectangle is a special case of the parallelogram." is as follows:

The teacher gives the students a parallelogram like the one below (Figure 1) and asks them which geometric shape it is. He then asks them to cut the small piece and add it to the other side of the large piece (Figure 2). The students discover that it is a rectangle. In this way, students understand why a rectangle is a special case of a parallelogram.

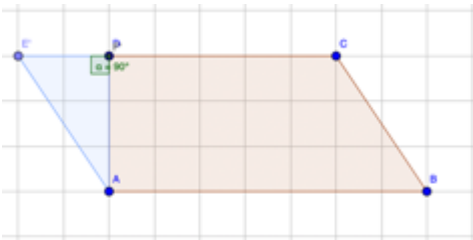


Figure 1.



Figure 2.

Evaluate the above practice in terms of the related outcome. How would you like to implement the same learning outcome?

Figure 1. Erroneous example task

The pre-service teachers were given an erroneous example aiming to show the relationship between a rectangle and a parallelogram, and they were asked to evaluate this task in terms of the related outcome and suggest a task for the related outcome. The data was collected in writing were analyzed by content analysis method. The data analysis framework regarding the criteria for evaluating the task with the erroneous example and the data analysis framework used for task suggestions are given in Table 1 and Table 2.

Table 1. Data Analysis Framework for the Erroneous example

Codes	Description	Example Situation
Erroneous example	Opinions that the example was inaccurate when evaluating the task	The task is not suitable for the outcome. We cannot take a shape and say that it is a special case of another shape. A parallelogram can be formed from two trapezoids, but it is clear that a parallelogram is not a trapezoid. (S11)
Correct example inadequatetask	While evaluating the task, opinions that the example was correct but the task was not sufficient	It is a very good example to concretize, but an association could have been made between the properties of the rectangle and parallelogram, not only in terms of shape. (S15)
The right example	Opinions that the example was correct when evaluating the task	The student realized that the parallelogram contains a rectangle within itself. (S10)
No response	No opinion expressed	

Table 2. Data Analysis Framework for Efficiency Evaluation

Codes	Description	Example Situation
Properties of Quadrilaterals	Tasks comparing the properties of rectangle and parallelogram and emphasizing that the rectangle has all the properties of the parallelogram	If I were to design a task, I would focus on the properties of these two quadrilaterals. I ask students to write the properties of both rectangles and compare them. Then I would ask questions about the relationship between them. One of these questions would be "Does the rectangle satisfy all the properties of the parallelogram?" (S48)
Area Conservation	Tasks in which the idea that the area of a parallelogram and a rectangle with the same height and base length is equal is used as a reference to show that a rectangle is a special case of a parallelogram	I give students a rectangle (paper or cardboard) and ask them to form two equal triangles. I ask them to form parallelograms with these triangles. (S46)

Figurative representation	Tasks based on the idea that both rectangles and parallelograms can be formed by moving the sides of a quadrilateral designed with movable vertices through concrete materials or dynamic geometry software	I would bring a moving parallelogram material like the one in the figure below. By moving the sides, it would be seen that it is a rectangle when the angles are 90° . In this way, since a rectangle was obtained from a parallelogram, students understood that a rectangle was a special case of a parallelogram. (S28)

After the data were coded according to the above analysis frameworks, the results of the evaluation of the erroneous example and the task suggestions were examined and discussed in relation to each other.

RESULTS

In this section, the findings obtained as a result of the pre-service teachers' evaluation of a task containing an erroneous example and the analysis of the examples they presented as alternatives are presented and then this process is evaluated holistically.

Evaluation of the Erroneous Example and Task Suggestions

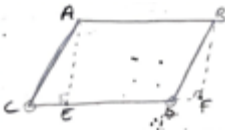
The pre-service teachers' evaluation of the erroneous example in the given task and the examples in the task they presented as an alternative were examined and the results were obtained. As can be seen in Table 3, the proportion of participants who realized that the example in the task about rectangle being a special case of parallelogram was 18% (n=16). The proportion of pre-service teachers who thought that the erroneous example was correct was the highest (n=40). The rate of participants who did not evaluate the task and/or the erroneous example was 11% (n=10). 27% of the pre-service teachers thought that the example in the task was correct but the task was inadequate (n=24). This result shows that the majority of the pre-service teachers were inadequate in analyzing the erroneous example. Only 18% of the pre-service teachers made a correct evaluation and stated that the example was erroneous. When the reasons of these pre-service teachers for why the erroneous example is not correct are analyzed, two different situations emerge: (1) Properties of quadrilaterals, (2) Different shapes can be created with cut-and-paste. For example, "It is not suitable for the learning outcome. There is a logic error. What is done here is to turn a parallelogram into a rectangle. It may also cause misconceptions. It is necessary to emphasize the properties of both geometric shapes and think about their common features." (S50), the participant drew attention to the deceptive aspect of the process performed in the task and stated that the important thing is to focus on the properties of rectangles. For example, it is seen that the pre-service teachers who think that the example used for area conservation is not suitable for showing the hierarchical relationship between parallelograms and rectangles, while others focus on the fact that different geometric shapes can be created by cut-and-paste that are not triangles, isosceles trapezoids or special polygons. One of the views of the participants in this group is as follows:

"It can lead to misconceptions. Any geometric shape can be transformed into another geometric shape by cutting any part of it and combining it in a different way. A rectangle can also be obtained by cutting a triangle." (S44)

When the opinions of the pre-service teachers are examined, it can be said that they realized that the example given in the task was erroneous, but rather than explaining why it was erroneous, they exemplified that the given situation would not always be valid.

Table 3. Pre-service teachers' evaluations and task suggestions

Task Evaluation	Sample Testimonials	Event Proposal Content	Sample Task Suggestions
Erroneous example (n=16)	The task is not suitable for the outcome. We cannot take a shape and say that it is a special case by obtaining another shape from it. A parallelogram can be formed from two congruent trapezoids, but it is clear that a parallelogram is not a trapezoid. S11	Properties of quadrilaterals (n=12)	"If I were to design a task, I would focus on the properties of these two quadrilaterals. I would ask students to write the properties of both quadrilaterals and compare them. Then I ask questions about the relationship between them. One of these questions is "Does the rectangle satisfy all the properties of a parallelogram?"." S48
		Area Conservation (n=2)	"If I were to prepare a task, I would cut and paste the triangle using GeoGebra so that the students can see that it is pasted correctly. I ensure that each student sees the application effectively by making them use it themselves." S52
		Figural representation (n=2)	"I would connect the juice straws and form a parallelogram that can be moved in all directions. Then I would ask the students to form a rectangle from this parallelogram." S31
Correct example but inadequate task (n=24)	It is a very good example to concretize, but it is not enough to show it only figuratively. An association could have been made between the properties of rectangle and parallelogram. S15	Properties of quadrilaterals (n=16)	"If it were me, I would divide the board into thirds and write the properties of the square, then the properties of the rectangle, and finally the properties of the parallelogram on the board together with the students. Thus, the students would see the differences and similarities themselves. Finally, I would draw the shapes on the board and let them see the relationship between them." S35
		Area Conservation (n=4)	"I would create a parallelogram by giving a rectangle and subtracting two equal right triangles from the rectangle. I would make them learn together by doing a group task." S46
		Figural representation (n=4)	"I give students a parallelogram and two right triangles whose hypotenuse lengths are the same length as the sides of the parallelogram. Then I make them realize that this is a rectangle by matching the sides of the parallelogram with these triangles. In this way, they discover that a rectangle is obtained from a parallelogram and that all the angles of a rectangle are right." S24
Correct example (n=40)	The student realized that the parallelogram contains a rectangle within itself. S10	Properties of quadrilaterals (n=10)	"I would do a task like this: I would show the students a parallelogram and a rectangle on paper. The children already know both shapes. Then I would ask them about the properties of these quadrilaterals in turn. In line with the answers given, I make them realize that the rectangle has all the properties of a parallelogram. They understand that a rectangle is a parallelogram." S17
		Area Conservation (n=23)	

	 "I would give them a rectangle and ask them to cut the small triangle piece and add it to the other side of the shape. I ask what the resulting shape is. The students discover that it is a parallelogram. Then I get a rectangle from a parallelogram and students discover that a rectangle is a special case of a parallelogram." S10
Figural representation (n=8)	"I would bring a parallelogram made with straws to the classroom. First, I would ask the students about the shape in my hand. Then I would move the straws so that the corners were perpendicular. When I asked them this time, they would say that it was a rectangle. Then I would say: "Well, wasn't it a parallelogram just now? See, just by changing the angle between the sides, we got a rectangle from a parallelogram." Students would thus discover that a rectangle is also a parallelogram." S19
Properties of quadrilaterals (n=4)	"Before going to class, I prepare a task sheet with two columns, one with the properties of a parallelogram and the other with the properties of a rectangle. I ask students to write the properties of quadrilaterals and compare them. Seeing that all the properties of a parallelogram are also properties of a rectangle, students discover that a rectangle is a special case of a parallelogram." S25
Area Conservation (n=4)	"By cutting the rectangle from the marked diagonal, we get two equiangles. We can form a parallelogram by connecting these two congruent triangles as in Figure II." S47 
No answer (n=10)	
Figural representation (n=2)	"I would create a rectangle out of wooden or plastic sticks with movable joints (corners). I could create shapes at different angles by moving the corners of the rectangle. I would stick the material I prepared on the board as a parallelogram with the help of a magnet. Then I would have the students measure its height by lowering the perpendiculars from corners A and B to the sides. I would move the bottom two corners (C and D) and bring them to points E and F. I would have them measure the interior angles of the resulting shape and show that it is a rectangle. In this process, I would make them realize that only the angles change and the side lengths do not change and show that the rectangle is a special parallelogram." S5 

All of the pre-service teachers who thought that the erroneous example was correct argued that the area relation of the parallelogram could be used to show that the rectangle is a special parallelogram with the cut-and-paste method, as in a task for exploring with the help of the area relation of the rectangle. The number of participants who associated the principle of invariance of area with the properties of quadrilaterals was 62. While most of them ($n=40$) believed that the example was correct, others ($n=22$) stated that the example was correct but the task was inadequate. The common view of the participants who thought this way was that this example could prevent possible misconceptions and that it was a remarkable task suitable for the learning outcome. Some of the participant opinions regarding the correctness of the example are as follows:

"It is a good technology-supported application for discovery. It also prevented the formation of misconceptions." (S19)

"Since students have a concept image for each shape, they experience misconceptions in special quadrilaterals. With this task, the misconception is corrected." (S23)

Along with the above opinions, it was found that the explanations made by two pre-service teachers who thought that the example was correct were inconsistent within themselves. One of these opinions belongs to S3:

"This example is correct. At the same time, the trapezoid can also be obtained by inverting and adding the hatched area. From this it can be seen that the trapezoid is a special case of the parallelogram. From both results it can be concluded that an isosceles trapezoid is a special case of a rectangle."

As can be understood from this statement, the pre-service teacher experiences the cognitive difficulty that the students will experience by inferring that an isosceles trapezoid can also be obtained with cut-and-paste based on this example and that the isosceles trapezoid will also be a rectangle. Similarly, S10 said, "The student realized that the parallelogram contains a rectangle within itself. When the operation is done in reverse, it can be seen that the parallelogram is a rectangle." His opinion is again aimed at making a wrong generalization.

Two pre-service teachers who thought that the given task was appropriate for the outcome tried to explain the erroneous example with the concept of area conservation. For example; S40 "It is a task with a high probability of retention. The student understands that the areas of the parallelogram and rectangle in the figure are the same. Because there is no decrease on the figure." With his statements, he associated the reason why the rectangle is a parallelogram with the fact that the areas are equal.

Although the pre-service teachers who thought that the example in the given task was correct but the task was inadequate provided similar justifications, some of them pointed out that it was necessary to emphasize the properties of quadrilaterals; some of them pointed out that different geometric shapes could be obtained if they were not careful in the cut-and-paste process and that the task was inadequate in this respect. For example, "The student understands that there is a relationship between a rectangle and a parallelogram and sees that a rectangle is a parallelogram. But for this, the student needs to know the properties of rectangle and parallelogram and compare the similarities and differences between them." (S46); S22 stated that the example given was appropriate to show that the rectangle was a parallelogram, but it was also important how to position the cut piece, "With this task, it was shown that the rectangle is a special form of a parallelogram. Since the angles of the parallelogram are not 90° , students cannot comprehend that it is a rectangle. They understand that it is a rectangle when they take a perpendicular from one corner of the parallelogram and put it on the other side. The task is good for them to see the rectangle, but it is also important how to put the triangle. They can also put it in such a way that no rectangle is formed." His opinion represents the second group.

One of the findings of the study is that 11% of the pre-service teachers did not evaluate the task. However, none of these participants left the question completely unanswered. Each of them

answered the second part of the question which asked them to suggest an alternative teaching practice.

When the findings related to the question that asked the prospective teachers to suggest a task for the same outcome after evaluating the given task were analyzed, it was determined that the alternative tasks of the prospective teachers had three different themes: (1) Properties of Quadrilaterals, (2) Area Conservation, (3) Figurative Representation. The first of these themes, Properties of Quadrilaterals, includes tasks that compare the properties of rectangle and parallelogram and emphasize that rectangle has all the properties of parallelogram. The task suggestions collected under this theme were evaluated as correct. Conservation of area includes tasks in which it is tried to show that a rectangle is a special case of a parallelogram by referring to the idea that the area of a parallelogram and a rectangle with the same height and base length is equal. Therefore, the examples in this theme were evaluated as incorrect. The last theme, figural representation, is based on the idea that both rectangles and parallelograms can be formed by moving the sides of a quadrilateral whose vertices are designed to be movable through concrete materials or dynamic geometry software. Since the focus here was only on the shapes of quadrilaterals, not on their properties, these examples were also considered as incorrect. As can be seen in Table 3, all of the pre-service teachers who recognized the erroneous example, found it correct but inadequate, thought that the example was correct and did not comment on it presented examples for the three themes identified in the task suggestions. Figure 2 shows the relationship between the pre-service teachers' evaluation of the erroneous example and the themes of the task suggestions more clearly.

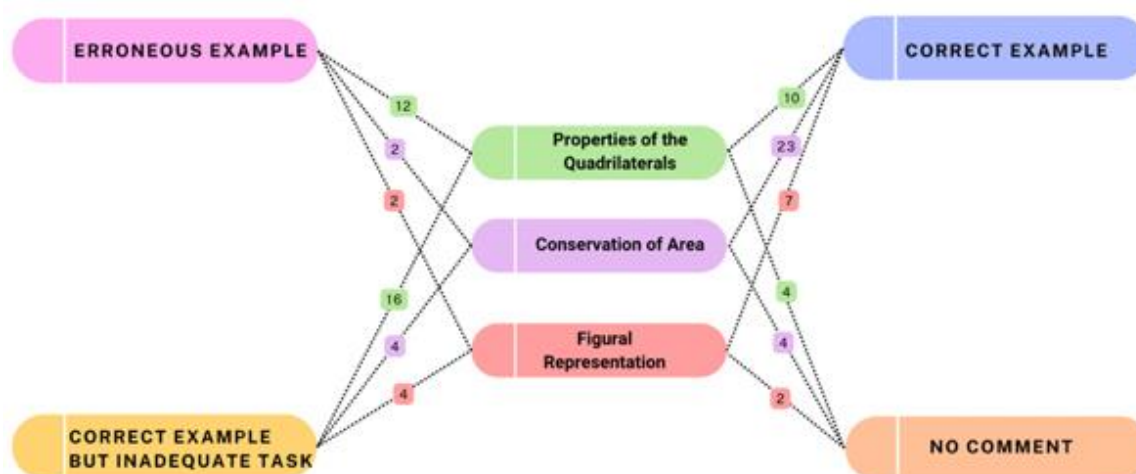


Figure 2. The relationship between task evaluations and the themes of the task suggestions

47% of the pre-service teachers ($n=42$) suggested a task in which the properties of rectangle and parallelogram were listed and the hierarchical relationship between these quadrilaterals was explored by determining their common properties. Among these pre-service teachers, 16 of them found the example correct but the task inadequate, and 12 of them realized the erroneous example. Explaining why the erroneous example was not correct, S48 presented the following task:

"If I were to design a task, I would focus on the properties of these two quadrilaterals. I would ask students to write the properties of both quadrilaterals and compare them. Then I would ask questions about the relationship between them. One of these questions would be "Does the rectangle fulfill all the properties of the parallelogram?"

S2, who saw the erroneous example and alternatively suggested a task in which students compare the properties of a rectangle and a parallelogram by listing the properties of the rectangle and the parallelogram, added, "I can make them realize why an application like the one above is erroneous." He stated that he could use the erroneous example appropriately in his lesson.

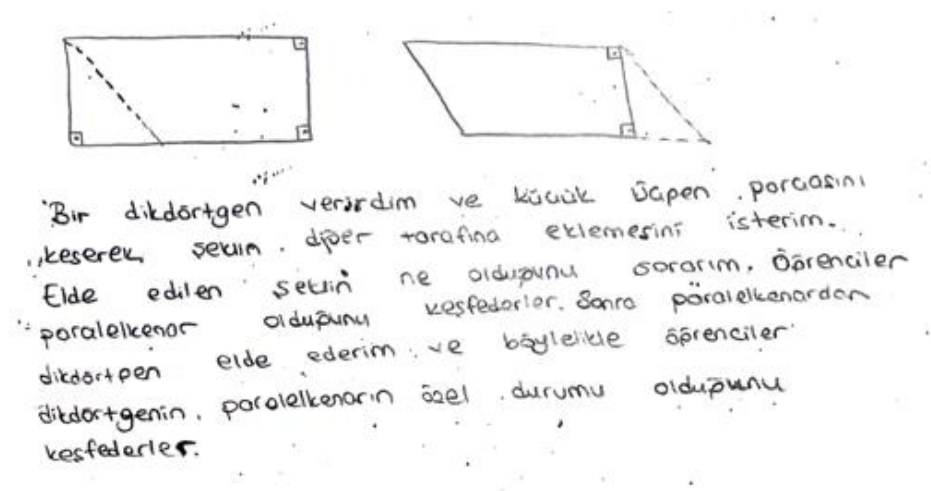
The task suggestion of S35, one of the participants who thought that the example in the given task was correct but insufficient, is as follows:

"If it were me, I would divide the board into thirds and write the properties of the square, then the properties of the rectangle, and finally the properties of the parallelogram on the board together with the students. Thus, the students would see the differences and similarities themselves. Finally, I would draw the shapes on the board and let them see the relationship between them."

S37, one of the participants who thought that the example in the given task was correct but insufficient, stated that she would apply the same task and in addition, she would ask questions to compare the common features and differences of parallelograms and rectangles.

The findings show that 37% (n=33) of the pre-service teachers tried to show that a rectangle is a parallelogram based on area conservation. Under this theme, there are task suggestions belonging mostly to the pre-service teachers who thought that the example was correct (n=23) and least to the pre-service teachers who evaluated the example incorrectly (n=2). In the tasks under this theme, there is a transition from parallelogram to rectangle and from rectangle to parallelogram by cut-and-paste. In addition, one pre-service teacher presented examples showing that a rectangle can be obtained from a trapezoid and a trapezoid can be obtained from a parallelogram with the cut-and-paste method.

The pre-service teachers who thought that the example in the task was correct tried to reach different quadrilaterals with the same area by cutting the quadrilaterals into pieces with the cut-and-paste method, as in the erroneous example. For example, the task suggested by S10 is as follows:



(Translation: "I give them a rectangle and then ask them to cut out a small triangle and add it to the other side of the shape. I ask what the resulting shape is. The students discover that it is a parallelogram. Then I get a rectangle from a parallelogram, and students discover that a rectangle is a special case of a parallelogram.")

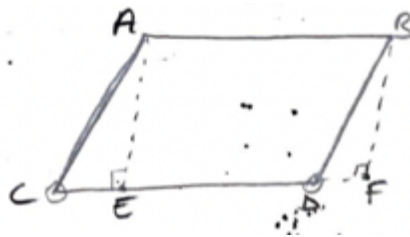
As can be clearly seen in this example, the pre-service teacher tries to establish a direct relationship between area conservation and the properties of polygons. The participant thinks that first making a transition from rectangle to parallelogram and then applying the reverse is appropriate for the acquisition. It was determined that the other 32 pre-service teachers who had the same idea as S10 presented the same or similar examples.

It is seen that the two pre-service teachers who analyzed the erroneous example correctly gave examples that contradicted their thoughts. Both of them stated that the erroneous example could lead to misconceptions, but they suggested a task in which a rectangle was created from a parallelogram.

The task suggestions of the pre-service teachers in which they thought that rectangles and parallelograms could be transformed into each other as in area conservation were analyzed under the code of formal representation. However, the focus here is neither the properties of

quadrilaterals nor area conservation; it is emphasized that rectangles and parallelograms can be transformed into each other by moving the opposite sides, and 17% ($n=15$) of the preservice teachers suggested tasks based on this idea. For example, S31 "I would combine juice straws and create a parallelogram that can be moved in all directions. Then I would ask students to create a rectangle from this parallelogram." It was found that the other pre-service teachers suggested similar tasks using concrete materials or GeoGebra, a dynamic geometry software. However, two pre-service teachers wanted to support the shape they would create by drawing while using concrete materials. S5 explained his material as follows:

"I would create a rectangle out of wooden or plastic sticks with movable joints (corners). I could create shapes at different angles by moving the corners of the rectangle. I would stick the material I prepared on the board as a parallelogram with the help of a magnet. Then I would have the students measure its height by lowering the perpendiculars from corners A and B to the sides. I would move the bottom two corners (C and D) and bring them to points E and F. I would have them measure the internal angles of the resulting shape and show that it is a rectangle. In this process, I would make them realize that only the angles change, the side lengths do not change and show that the rectangle is a special parallelogram."



As can be understood from S5's explanations, it can be said that the prospective teacher is aware that the lengths of the sides and the height of the parallelogram are different and that there will be no change in the

lengths when the sides are moved until they form a right angle. However, the visual representation she drew is inconsistent with her thoughts. In fact, it is not possible to move point C to point E and point D to point F with the concrete material he designed. Such a situation requires the length and height of the sides AC and BD of the parallelogram to be equal.

When the research findings were evaluated in general, it was determined that the most suggested task theme was the properties of quadrilaterals and half of the pre-service teachers ($n=42$) paid attention to this theme. In particular, 67% ($n=16$) of the pre-service teachers who thought that the erroneous example given was correct but inadequately tried to make them discover that rectangle is a special case of parallelogram based on the properties of quadrilaterals, which shows that they made the correct suggestion even though they did not realize the mistake. The findings reveal that 37% ($n=33$) of all participants suggested a task based on area conservation to show the relationship between two quadrilaterals. In line with the purpose of the study, the ideal situation is that the pre-service teachers realize that the example in the given task is incorrect and offer a correct task alternative for the related outcome. When the findings were evaluated in this respect, it was concluded that the ideal situation was realized by only 13% ($n=12$) of the participants.

The Relationship between Evaluation of Erroneous Sample and Alternative Task Suggestions

In this study, it was found that the pre-service teachers who thought that the erroneous example was correct tended to make inferences by focusing only on the visual without considering the formal definitions or properties of quadrilaterals. These participants thought that the example in a task used to explore the area formula of a parallelogram was also appropriate to show that a rectangle is a special case of a parallelogram. The findings of the study revealed that 71% ($n=64$) of the pre-service teachers made comments by focusing on the visual of the geometric shape. This situation should not be considered as a simple surprise. In fact, when the task suggestions are taken into consideration, it is seen that many preservice teachers ($n=48$) used similar arguments. However, two different situations were encountered. The task suggestions coded as area conservation and figural representation in the data analysis point to different visual perception processes. As explained above, area conservation is based on the transformation of a rectangle and a parallelogram with the same area into each other in terms of shape, and 33 pre-service

teachers suggested tasks involving such examples. Figurative representation involves the process of constructing these two quadrilaterals with rods of the same size using drawings, dynamic geometry software, straws or moving rods. The focus is only on the shape and the properties of both quadrilaterals are not taken into account. Fifteen pre-service teachers with this view proposed such a task, and two of them argued that the example in the given task was incorrect.

Within the scope of this study, it was determined that the conceptual knowledge of the pre-service teachers who were able to explain that the example in the given task was incorrect and suggested a task with the correct example was at the forefront and reasoning was at the basis of the association process ($n=12$). The fact that 4 pre-service teachers suggested tasks based only on visual perception despite recognizing the erroneous example can be interpreted as that these participants could not use their conceptual knowledge effectively in the reasoning process. Similarly, the fact that 26 pre-service teachers suggested tasks for the properties of quadrilaterals even though they thought that the erroneous example was correct shows that they did not have a complete conceptual understanding. In this study, 44% ($n=40$) of the pre-service teachers remained in this gap. There is a contradiction between the evaluations and suggestions of these participants.

DISCUSSION

The results of this study, which was conducted to examine the pre-service teachers' evaluation of the hierarchical structure between a rectangle and a parallelogram through an erroneous example, unfortunately show that the participants were not good enough in this regard. It should be noted that the purpose of this study was not to determine whether the pre-service teachers were aware of the fact that a rectangle is a parallelogram. It was assumed that the participants were aware of this topic since it was included in the Fundamentals of Mathematics 2 course. However, this information was reinforced for the pre-service teachers by including the outcome "A rectangle is a special case of a parallelogram" at the beginning of the erroneous example task given for evaluation.

The present findings therefore reinforce the claim that pre-service teachers continue to rely predominantly on 'concept images' rather than formally articulated 'concept definitions' when classifying quadrilaterals—an analytical blind spot that has persisted across cohorts (Fujita & Jones, 2007; Tall & Vinner, 1981).

Therefore, the pre-service teachers were asked to evaluate the given task to determine their mathematical awareness and to suggest a task to see how they handle different mathematical opportunities offered by different teaching methods. The results obtained showed that the erroneous examples were effective in gaining pedagogical knowledge to be prepared for possible student difficulties that may be encountered in the real classroom environment and to determine the way to handle the error (Biza et al., 2007; Mason, 1998), as well as revealing how misconceptions in students can be pedagogically teacher-induced. In addition, this study also provided an opportunity to examine whether the knowledge of pre-service teachers, who were found to be inconsistent between identifying the erroneous example and the task suggestion, was based on formal or conceptual foundations. Duval (1995; 2006) defines the process of inferring geometric shapes by focusing only on their visuals without considering their formal definitions or properties as processing. Processing is not always a process that leads to incorrect results. The characteristic of this cognitive process is that visual perception is at the forefront and inferences are not made based on mathematical arguments.

Complementing these descriptive results, recent controlled studies on incorrect-worked examples have shown that their efficacy hinges on the careful orchestration of cognitive load and on prompting learners to articulate why the displayed argument is invalid (Ngu et al., 2025; Yap & Wong, 2024; Soncini et al., 2022). In our data, participants who identified the error but still proposed visually driven tasks illustrate that cognitive conflict, by itself, is rarely sufficient; guided inquiry questions appear necessary to convert conflict into conceptual growth.

The results of the study show that most of the pre-service teachers ($n=64$) are in this process. Although there is not always an incorrect result at the end of the processing process, in this study, the participants' comments based on visual perception are the comments that cause them to misevaluate the erroneous example and to suggest tasks that contain the erroneous example. The results of the study show that pre-service teachers have two different processing processes: (1) area conservation and (2) figural representation. Each of these codes can lead to different student difficulties. For example, carrying a task that involves transforming a rectangle and a parallelogram with the same area into each other by ignoring their properties may lead to a misconception such as "If we can infer that the rectangle is a parallelogram because we can get a rectangle from a parallelogram by cutting and pasting, then we can say that the parallelogram is a rectangle when we get a parallelogram from a rectangle with the same method". Similarly, through drawings, dynamic geometry software, pipettes or moving rods, the focus is on the shape only, neglecting the properties of these two quadrilaterals. One such erroneous example is "If we can turn a rectangle created with moving sticks into a parallelogram by changing only the angles, then we can turn a parallelogram into a rectangle. Then a parallelogram is also a rectangle." This may cause a misconception. In fact, from a different perspective, this practice raises the following question: "If this method is functional, why cannot it be used to show that a square is a rectangle?" In both applications, the erroneous examples are illusions that create a visual illusion. Although the reasons underlying the reaction of the preservice teachers to the erroneous example and the task suggestions containing erroneous examples cannot be fully understood, it can be said that their concept images are the reason why they are deceived by these illusions.

This pattern resonates with the 'analytic habits' dimension of geometric mental habits developed by Özdemir & Çekirdekci (2022), wherein learners oscillate between surface-level manipulations and property-based argumentation. The large proportion of participants who initially failed to flag the erroneous example suggests that these analytic habits are not yet automatised at the end of their teacher-education programme.

As stated in Fischbein's (1993) Figural Concept Theory, conceptual knowledge and shape knowledge do not support each other in the minds of these participants. When the study is evaluated in terms of pre-service teachers' visualization of the relationship between rectangle and parallelogram, it can be said that the results support different studies in the literature (e.g., Toluk et al., 2002; Fujita & Jones; 2006; Sahin, 2023). Evaluations based on visual perception can be evaluated as the pre-service teachers' concept images or shape knowledge overriding their concept knowledge or the gap between these two types of knowledge. One of the reasons for such a result is thought to be the neglect of the relationship between the definitions, properties and formal representations of concepts in mathematics teaching (Toluk et al., 2002; Sahin, 2023).

When the task suggestions of the pre-service teachers for the hierarchical relationship between rectangle and parallelogram are analyzed, it is seen that 47% ($n=42$) of them use the conceptual knowledge of these quadrilaterals. However, when the results of the evaluation of the erroneous example are taken into consideration, it can be said that only 13% ($n=12$) of them have conceptual knowledge, while the others prioritize their formal knowledge. Such a result shows the power of the erroneous example in revealing formal and conceptual knowledge. This result can be considered as the most important result of the study. In fact, it was revealed through the erroneous example that although the pre-service teachers knew that a rectangle is a parallelogram, for most of them this knowledge was not based on conceptual foundations. In studies using error-based tasks, it is emphasized that one of the factors determining the effect of the erroneous example is the students' readiness level (e.g., Große & Renkl, 2007; Gürbüz et al., 2021). In these studies, it was concluded that students who do not have sufficient prior knowledge have difficulty in analyzing errors. Since this study was conducted with the participation of pre-service teachers, such a result was not obtained.

Taken together, these outcomes imply that embedding erroneous examples within micro-teaching simulations could function as a powerful design element for cultivating pedagogical content knowledge in geometry. A recent systematic review by Shimizu and Kang (2025) likewise shows

that error-oriented instructional strategies help pre-service teachers anticipate, diagnose, and productively address student misconceptions.

Finally, the study highlights that the misalignment between concept image and concept definition is not confined to K-12 learners but persists into teacher education. To mitigate this risk, it is recommended that university courses adopt multi-representation tasks mediated by dynamic-geometry environments and explicitly aligned with the Van Hiele levels, an approach further supported by recent classroom studies using GeoGebra to scaffold inclusive quadrilateral definitions (Vízek & Samková, 2023; Avcu, 2023).

CONCLUSION AND RECOMMENDATIONS

The main purpose of using erroneous examples in mathematics teaching is to support conceptual learning by analyzing the error and discussing the concepts and content (Borasi, 1989; Durkin & Rittle-Johnson, 2012). With reference to these results, especially those obtained as a result of studies conducted with students, it is recommended that erroneous examples be used as a tool in mathematics teaching, taking into account their "instructive" aspect. For teachers or pre-service teachers to effectively incorporate erroneous examples into the learning environment requires them to be aware of erroneous examples and their importance. For this purpose, one of the studies to be conducted is to determine their perspectives on erroneous examples and the other is to examine how they analyze erroneous examples. Expanding the literature on this subject will reveal effective results in terms of the use of erroneous examples in mathematics teaching and teacher education. In this sense, this study is thought to contribute to the literature. Future studies may focus on determining the views of pre-service teachers and/or teachers on the use of erroneous examples in mathematics teaching, and examining the classroom environments in which erroneous examples are used in terms of different factors such as student achievement, motivation, teacher intervention types, and teacher-student interaction.

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Reading Skills in the Visually Impaired: Bibliometric Trends and Thematic Analysis

Cihan ALBAY¹Gökhan ILGAZ²

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Abstract

This study aims to analyze the academic literature on reading skills of visually impaired individuals using bibliometric methods. A total of 419 academic publications from 1981 to 2025, sourced from the Web of Science database, were examined using the bibliometrix package in R Studio. The analysis evaluated annual publication trends, influential authors, institutions, keywords, and thematic clusters. Findings highlight the prominence of technological approaches and interdisciplinary collaboration in the field. Notably, studies focusing on artificial intelligence and assistive technologies aim to enhance the accessibility of reading processes. Additionally, research emphasizing the impact of educational interventions for children underscores the importance of early support for visually impaired individuals. The integration of AI-supported tools with Braille, audiobooks, and tactile technologies has improved accessibility. Geographic analysis reveals that publications are predominantly concentrated in developed countries (e.g., USA, UK, China), indicating a need to enhance research capacity in developing nations. Thematic analysis identifies accessibility, education, and technological adaptations as key focus areas. The study seeks to contribute to the development of more inclusive reading strategies for the visually impaired. Future research should prioritize applied studies on integrating AI-driven technologies with pedagogical approaches and encourage multilingual data analyses.

Keywords: Key visual impairment, reading skills, braille, assistive technology

INTRODUCTION

Reading is a fundamental competency that determines not only an individual's access to information, but also their active participation in social life, cognitive development and independent living skills. However, the acquisition and maintenance of this skill for visually impaired individuals requires special pedagogical approaches and technological solutions. The difficulties experienced by individuals with visual impairment in accessing written materials should be considered not only as an individual disability but also as a systemic accessibility problem (Kao & Mzimela, 2019).

The Braille alphabet, developed in this context, has historically played an important role in the acquisition of independent literacy for the visually impaired. In addition to Braille, audio books, tactile graphics and digital technologies, which have become widespread especially in recent years, are being developed to make the reading process more accessible (Pawluk et al., 2015). Technologies such as OCR (Optical Character Recognition) and TTS (Text-to-Speech) allow users to perceive printed texts in audio form, reducing dependence on visual input (Bouazizi et al., 2015; Courtney, 2021).

Today, these technological solutions not only facilitate access, but also bring advantages such as portability, personalization and language support through mobile applications. Systems such as “Touch Talker” make it easier for the visually impaired to interact with digital texts, while Braille

¹PhD Student, Trakya University, Edirne, Türkiye, cihanalbay@trakya.edu.tr orcid.org/0000-0002-1834-1052

²Assoc. Prof. Dr., Trakya University, Faculty of Education, Edirne, Türkiye, gokhani@trakya.edu.tr, orcid.org/0000-0001-8988-5279

displays and actuator-assisted devices are still used as an important tool (Kiyota et al., 2022; Başçiftçi & Eldem, 2017). However, reading skills are not a competence that can be developed only with technological solutions. In this process, teachers' Braille knowledge, pedagogical skills and sensitivity to the individual needs of visually impaired individuals also play a decisive role. Indeed, research shows that teaching Braille as an “independent skill” without integrating it with other pre-reading skills creates limitations in the learning process (Kao & Mzimela, 2019). Especially for preschool and primary school children, tactile books and shared reading activities support not only reading skills but also conceptual development and vocabulary (Bara, 2013). In this context, early interventions have been shown to provide positive outcomes in terms of both academic achievement and social adaptation.

Recent studies conducted in the context of STEM education have also revealed that visually impaired individuals can learn actively in mathematics and science through tactile representations and visuals developed with 3D printers (Ulbrich et al., 2024). Such applications should not be considered as an attempt to compensate for visual deficiency, but rather as a result of the effort to unlock the educational potential of a different form of perception.

In the light of all these developments, questions such as how scientific production on reading skills for the visually impaired has developed over time, in which thematic areas it is concentrated, by whom and in which geographies these studies are carried out are becoming increasingly important. In this direction, the bibliometric analysis method offers the opportunity to systematically examine the trends in the literature and to evaluate the current state of the field with objective data. The difficulties encountered by visually impaired individuals in accessing written materials should be considered not only as an individual obstacle but also as a structural accessibility problem in educational systems and social structures. This situation directly affects the potential of individuals to access information, to actively participate in educational processes and to develop independent living skills. Especially the development of reading skills plays a vital role in terms of the academic success and social integration of these individuals. However, in the existing literature, the number of studies that comprehensively analyse pedagogical approaches and technological solutions to support these skills is limited. In this context, a systematic examination of academic publications on reading skills for the visually impaired with a bibliometric perspective is a critical necessity in terms of identifying current trends, existing gaps and future research needs in the field. By deepening this body of knowledge, this study aims to contribute to the development of more inclusive, accessible and evidence-based strategies not only for researchers but also for educators and policy makers.

Purpose of the Study

The aim of this study is to analyze academic publications on reading skills in the visually impaired by using bibliometric method to determine thematic distributions, publication trends, influential authors and institutions, and to develop recommendations to guide future research in this field.

METHOD

This study was conducted using bibliometric analysis method to examine the scientific literature on reading skills and methods for the visually impaired. Bibliometric analysis is an approach that uses statistical methods and visualization techniques to assess quantitative and qualitative characteristics of publications. This method is considered an effective tool for systematically analyzing productivity, collaboration networks, and thematic trends in the research field (Aria & Cuccurullo, 2017).

The data collection process was carried out by using keywords such as “visually impaired”, “reading skills”, “braille”, ‘audiobook’ and “accessibility” in the Web of Science academic database. The bibliographic data of the scanned publications were processed with the bibliometrix package in R Studio software. Bibliometrix provides a comprehensive infrastructure for bibliometric analysis, enabling data processing, visualization and statistical analysis (Filiz, 2025).

Data Analysis

Within the scope of the analysis, the collected data were evaluated in terms of various bibliometric indicators using the bibliometrix package. Basic bibliometric indicators such as annual distribution of publications, most prolific authors, institutions, countries and journals were analyzed. In addition, research trends and thematic clusters in the field of reading skills for the visually impaired were identified through keyword analysis and thematic maps. Citation analysis and co-citation networks were used to reveal the intellectual structure and influential studies in the field.

In the visualization processes, collaboration networks, word clouds and thematic maps were created with the tools provided by the bibliometrix package. These visualizations provided a better understanding of research trends by visually representing the relationships between authors, institutions and keywords in the field. The analyses aim to reveal the current state of research on reading skills and methods for the visually impaired and to guide future research.

Sample Selection and Inclusion Criteria

To identify the relevant literature, a comprehensive search was conducted in the Web of Science Core Collection database using a title-abstract-keyword strategy. The search included combinations of the keywords: "*visually impaired*", "*reading skills*", "*braille*", "*audiobook*", "*low vision*", "*assistive technology*", and "*accessibility*". The Boolean logic AND/OR were used to refine the query and maximize the retrieval of relevant documents.

The initial search yielded 985 records. The inclusion and exclusion process was carried out as follows:

- Scope-based exclusions: 974 records that did not directly address reading skills or assistive approaches for the visually impaired were excluded after title and abstract screening.
- Document type exclusions: 11 entries categorized as editorials, book reviews, meeting abstracts, corrections, or notes were removed.
- Language restrictions: Only articles published in English and Turkish were included to ensure accessibility and interpretability. Publications in other languages (n=39) were excluded.
- Final dataset: After applying all criteria, a total of 419 academic publications published between 1981 and 2025 were included in the analysis.

This process was visualized using a PRISMA-style flow diagram (Figure 1), providing a transparent overview of the selection strategy and ensuring reproducibility.

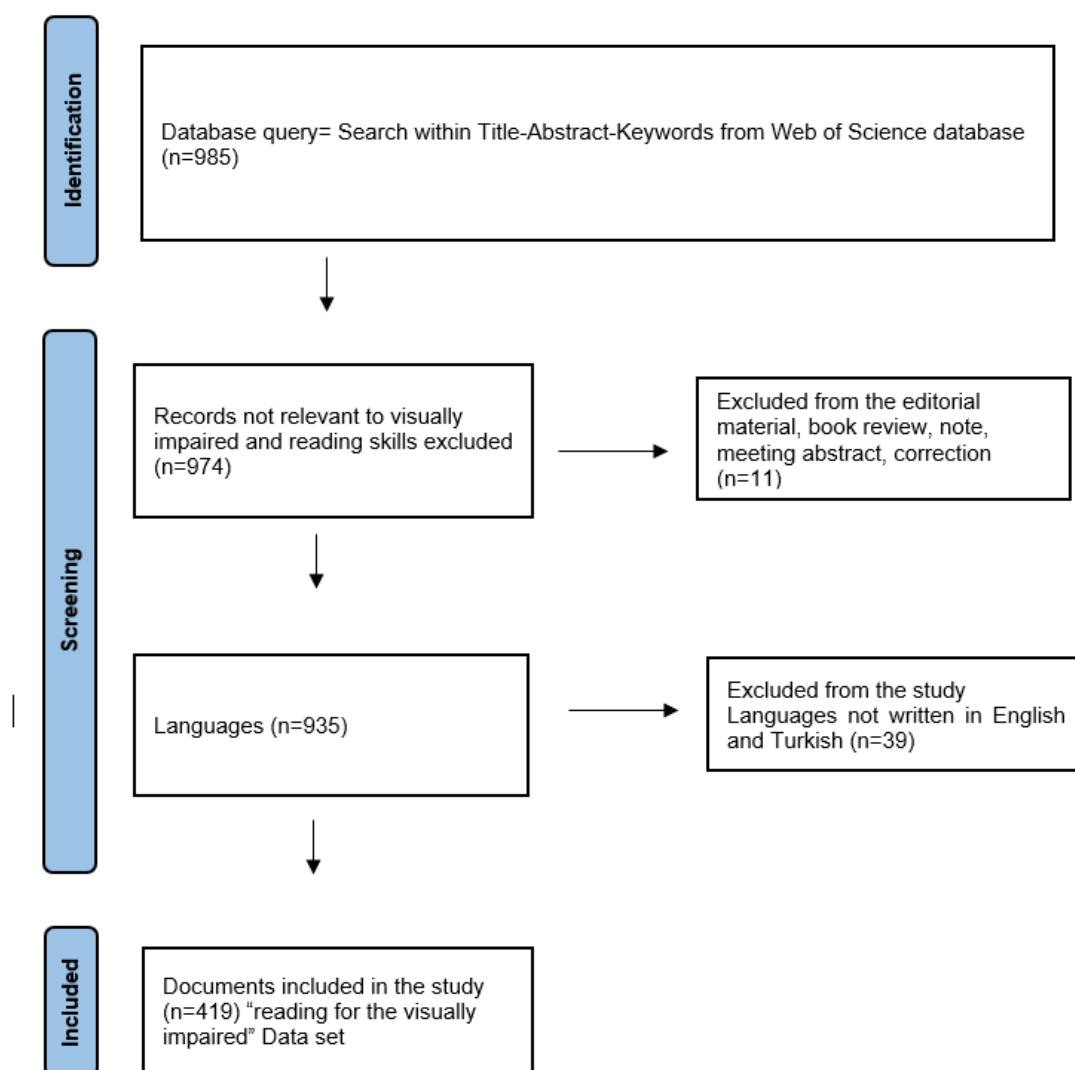


Figure 1. Article Process Workflow Chart

FINDINGS

General information about publications

Basic information, author characteristics and references of the publications are summarised in Table 1. The data were collected between 1981 and 2025, and a total of 419 publications were produced in the field of reading skills and methods for the visually impaired in this period. The first publication was published in 1981 and the annual growth rate was calculated as 6.18%. A total of 1043 keywords (ID) and 1217 author keywords (AE) were identified in the dataset; these keywords reflect the content of the articles and illuminate the topics examined. The number of single-authored studies was 41 and the average number of co-authors was 4.65 per study. A total of 14242 references were used in the analysed studies, and the average number of citations was 20.73.

Table 1. Main Information

Description	Results
Articles	419
Period	1981-2025
Sources (Journals, Books, etc)	239
Annual Growth Rate %	6,18
Document Average Age	11,9
Average citations per doc	20,73
References	14242
Keywords Plus (ID)	1043
Author's Keywords (DE)	1217
Authors	1757
Authors of single-authored docs	37
Single-authored docs	41
Co-Authors per Doc	4,65
International co-authorships %	17,66

The distribution of the types of publications accessed within the scope of the study is presented in Table 2.

Table 2. Distribution of Types of Publications

Publication types	Number of publications
Article	378
Article; book chapter	6
Article; early access	2
Proceedings paper	18
Review	15

The distribution of publication types is presented in Table 2. Accordingly, the majority of the 419 publications analyzed within the scope of the study are research articles (n=378). In addition, different types of publications such as book chapters (n=6), early access articles (n=2), conference proceedings (n=18) and review articles (n=15) were also found. This diversity shows that the field of reading skills for the visually impaired is enriched not only with original research but also with theoretical and review studies, and points to the existence of an interdisciplinary academic interest.

Publication Dynamics

The distribution of publications over time is visualized in the graph in Figure 2.

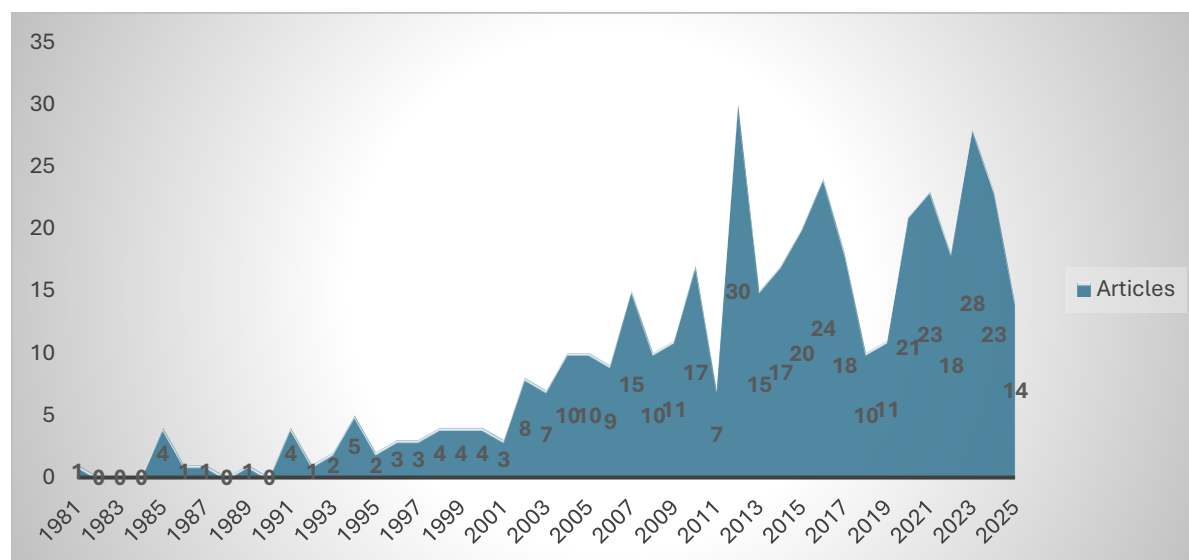


Figure 2. Change in Publications Over Time

According to the graph showing the distribution of publications between 1981 and 2025, academic studies on the reading skills of the visually impaired have shown a significant increase over time. While the number of publications was quite limited in the 1980s and 1990s, a gradual increase has been observed since the beginning of the 2000s. Especially after 2010, research in this field has gained momentum with the effect of technological developments. The year 2012 stands out as the peak with 30 articles, indicating that assistive devices such as artificial intelligence, screen readers and Braille technologies have become the focus of scientific interest. A steady increase in the number of publications continued between 2016 and 2020, and a second peak was experienced in 2023 with 28 publications. The 14 publications for 2025 can be explained by the fact that the year has not yet been completed. In general, the graph reveals the existence of an academic interest in reading skills research for the visually impaired that has increased and matured over time due to both technological developments and educational approaches. This fluctuating but rising trend shows that the field will maintain its importance in the future and is open to more interdisciplinary studies.

To visualize the structural dynamics of academic production by highlighting prominent publication sources, influential researchers, and dominant thematic trends in the field of reading skills for the visually impaired, a three-dimensional plot diagram is presented in Figure 3.

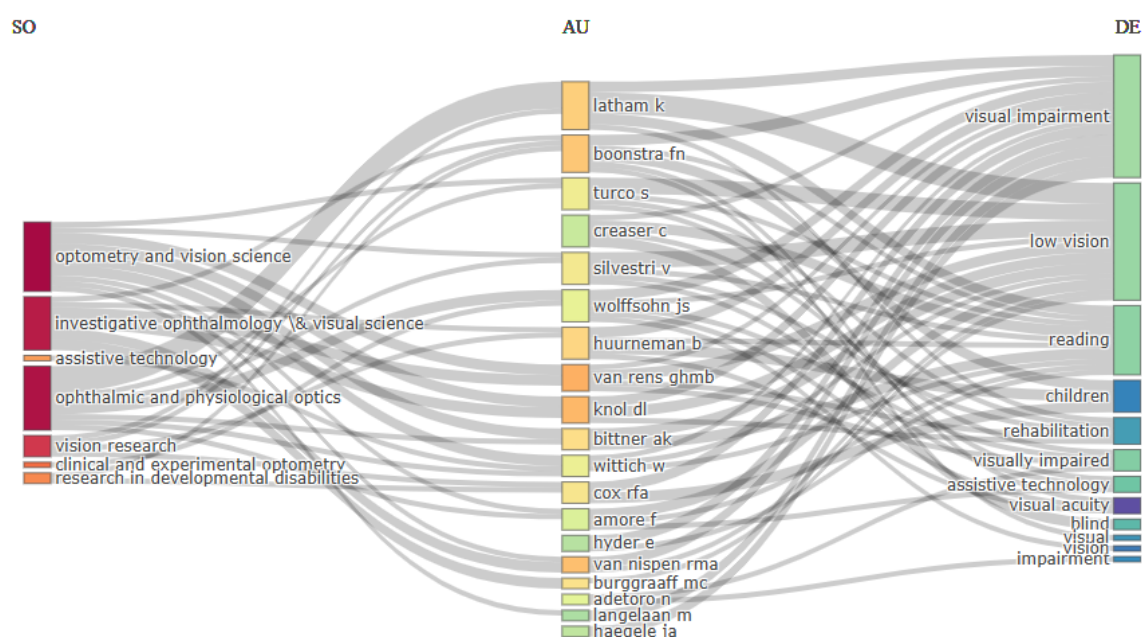


Figure 3. Three-field plot

Figure 3 presents a three-dimensional plot diagram to elucidate the structural dynamics of academic production in the field of reading skills for the visually impaired. This diagram visualizes the relationships among source organs (SO), authors (AU), and keywords (DE), providing a detailed reflection of the thematic connections and influential actors within the field.

In the left column, leading journals such as “Optometry and Vision Science”, “Investigative Ophthalmology & Visual Science”, “Ophthalmic and Physiological Optics”, “Vision Research” and “Research in Developmental Disabilities” are prominently featured. These sources constitute the main publication platforms for research on reading skills related to the visually impaired and emphasize the multidisciplinary nature of the field.

In the central part, researchers such as Latham K., Boonstra FN, Turco S., Creaser S., Silvestri V, Wolffsohn JS, Huurneman B, van Rens GHMB, Knoll DL, Bittner AK, Wittich W, Cox FRA, van den Broek ELC, Angelucci A, Haegle JA are represented in the diagram with dense links. These authors are considered leading figures in the field and play a central role in the publication network. In particular, names such as Latham K. and Boonstra FN were associated with more than one keyword, demonstrating effective production.

In the right column, keywords such as “Visual Impairment”, “Low Vision”, “Reading”, “Children”, “Rehabilitation”, “Visually Impaired”, “Assistive Technology”, “Blind”, “Visual Acuity” and “Impairment” reveal the dominant thematic orientations in the field. Terms such as “Visual Impairment” and “Low Vision” indicate the main focus of research, while concepts such as “Assistive Technology” and “Rehabilitation” reflect the interest in technological and therapeutic solutions for the visually impaired. In addition, the word “Children” emphasizes the importance of studies for the pediatric population.

The figure shows that the field of reading skills for the visually impaired is progressing in an interdisciplinary structure and that researchers from different fields of expertise are contributing. Especially in recent years, technological innovations and the increase in rehabilitation-oriented studies stand out as important dynamics that determine the development direction of the field.

Word analysis

The keywords used by authors in publications on reading skills for the visually impaired are presented in Figure 4.

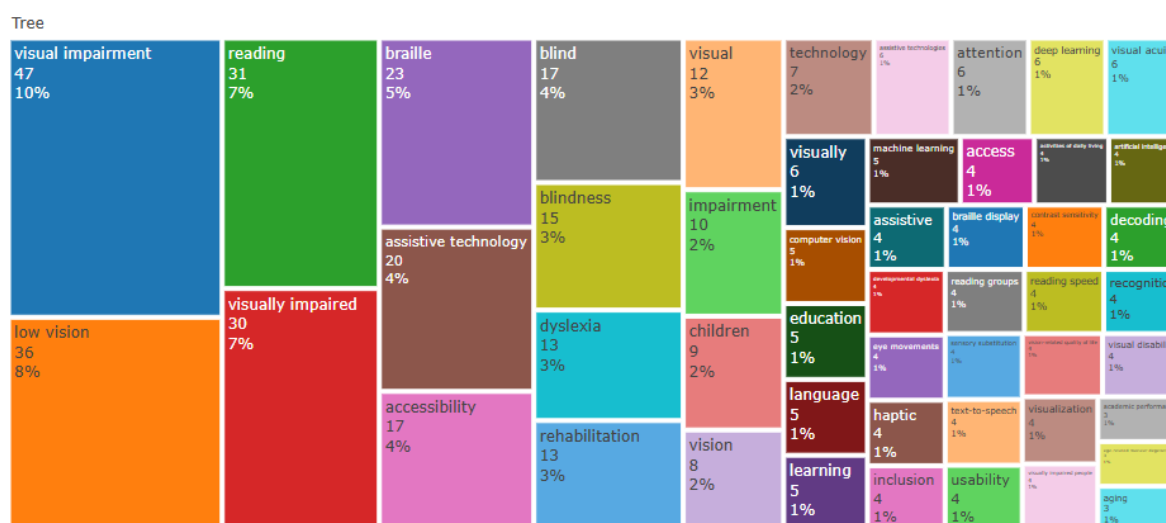


Figure 4. Keywords Used by Authors

According to Figure 4, the topics with the largest share in the field of reading skills for the visually impaired are visual impairment (30%) and reading (31%), indicating that these areas are central to development efforts. Braille (23%) holds a significant place as a fundamental method in reading skills, while assistive technology (20%) demonstrates the critical role of technological solutions in this process. These data highlight that Braille and assistive technologies are indispensable in enhancing reading skills for the visually impaired, with visual impairment and reading being the focal points in this field.

In the keyword trends analysis (trend topics), the evolution of publications in the field of reading skills for the visually impaired has been visualized on a coordinate plane using keywords, abstracts, and titles. This method clearly reveals the topics on which studies focused in specific years. The careful selection of keywords, abstracts, and titles plays a critical role in defining the boundaries of the research field and provides significant benefits. Researchers can quickly and effectively access publications related to reading skills for the visually impaired in the literature by utilizing these elements (Grant, 2010). Through the analysis of trend topics, transformations in the field and frequency distributions on the coordinate system can be easily monitored (Figure 5).

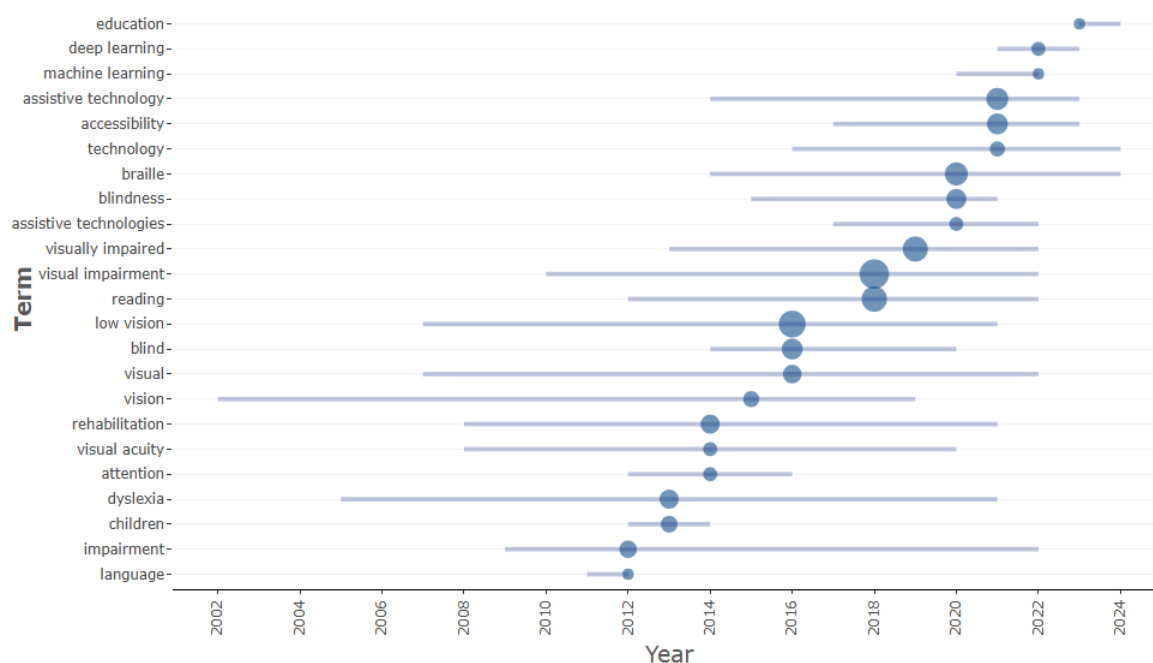


Figure 5. "Prominent Themes in the Field"

Figure 5 visualizes keyword trends in the field of reading skills for the visually impaired from 2002 to 2024, illustrating their evolution over time. The graph displays the usage frequency of various terms (e.g., "education," "assistive technology," "blindness," "visual impairment") with dots indicating yearly frequency, while horizontal lines represent each term's prevalence over time.

According to the analysis, terms such as "visual impairment" and "assistive technology" show a significant increase, particularly after 2018, reflecting the focal points of research in the field. The terms "education" and "machine learning" also exhibit a rising trend in recent years, highlighting the growing interest in the integration of technology with education. Conversely, traditional terms like "blindness" and "low vision" have maintained steady usage since earlier periods but have gained less prominence in recent years.

Terms such as "rehabilitation" and "visual acuity" have shown a gradual increase in usage since the 2010s, drawing attention, while terms like "dyslexia" and "language" have exhibited more limited usage. Overall, a notable rise in keyword diversity and frequency has been observed post-2015, indicating that research in the field of reading skills for the visually impaired has been enriched by technological innovations and education-focused approaches. This trend suggests that the structural dynamics of academic production in this field have increasingly revolved around accessibility and innovative solutions in recent years.

Keywords co-occurrence analysis is employed as an effective method to identify and thoroughly examine emerging and evolving themes in research focused on reading skills for the visually impaired (Figure 6). Evaluating the simultaneous usage frequency of keywords in publications provides valuable insights into understanding the prominent research focuses and trends in this field (Liu et al., 2020). The fundamental premise of this analytical approach is that the co-occurrence of two keywords within the same context indicates a thematic or conceptual connection between them.

Most Influential Authors and Sources

Table 3 lists the top 10 academic journals with the highest citation impact in the field of reading skills for the visually impaired. The ranking is based on bibliometric metrics such as the h-index, g-index, m-index, total citation count (TC), number of publications (NP), and the starting year of publication.

Table 3. The ten most cited sources

Source	h_index	g_index	m_index	TC	NP	PY_start
Optometry And Vision Science	10	18	0,323	449	18	1995
Investigative Ophthalmology \& Visual Science	9	10	0,333	432	10	1999
Ophthalmic And Physiological Optics	9	14	0,257	208	15	1991
Journal Of Visual Impairment \& Blindness	8	11	0,2	163	22	1986
Vision Research	7	7	0,219	300	7	1994
Plos One	6	7	0,5	175	7	2014
Frontiers In Psychology	5	6	0,333	315	6	2011
British Journal Of Ophthalmology	4	4	0,182	77	4	2004
Ieee Transactions On Haptics	4	4	0,235	137	4	2009
Research In Developmental Disabilities	4	4	0,25	67	4	2010

According to Table 3, Optometry and Vision Science leads with 449 citations and 18 publications, standing out for its sustained impact since 1995. Investigative Ophthalmology & Visual Science and Ophthalmic and Physiological Optics, with high citation counts and established histories (since 1999 and 1991, respectively), exert significant influence in the field. Journal of Visual Impairment & Blindness has offered the highest number of publications (22) since 1986, while journals like Vision Research and Frontiers in Psychology draw attention with fewer but highly impactful articles. PLOS ONE has shown rapid growth since 2014, and niche-focused journals such as IEEE Transactions on Haptics also make notable contributions. This table reflects the diverse impacts of both established and emerging journals in the field of reading skills for the visually impaired.

Figure 7 illustrates the publication activities of the most prolific authors in the field of reading skills for the visually impaired over time. In the figure, the years during which each author was active are plotted on the horizontal axis, while the number of publications is represented by the size of the bubbles. The bubble size is proportional to the number of articles published by the respective author in a given year. The line next to the author's name indicates the duration of their active publication period in this field.

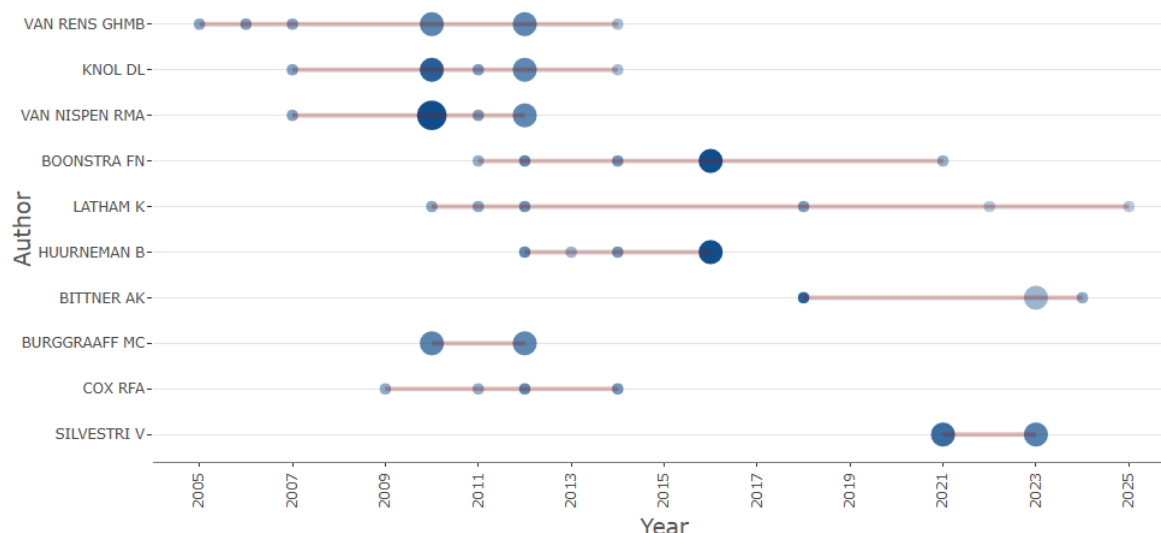


Figure 7. Authors' Production over Time

According to Figure 7, the period between 2005 and 2015 was observed as the most intensive publication period in the field of reading skills for the visually impaired, with notable peaks in author productivity particularly in 2011–2013 and 2017. Authors such as Van Rens GHMB and Van Nispen RMA exhibited consistent activity between 2005 and 2015, with a significant increase in 2011–2013, though their activity declined in subsequent years. Boonstra FN and Latham K maintained a prolonged publication period starting from 2007, achieving significant peaks in 2017, but their output decreased after 2020. Huurneman B began rising in 2013, reaching the highest publication output in 2017, though activity has waned in recent years. Bittner AK sustained activity between 2011 and 2015 and experienced a resurgence starting in 2021. Burggraaff MC and Cox FRA had intensive periods between 2011–2013 and 2009–2013, respectively, but fell silent in later years. Silvestri V, on the other hand, made a limited entry starting in 2019, with a slight increase in 2022, but overall displayed low productivity. These fluctuations highlight the field's evolving research dynamics, with some authors providing long-term contributions while others focused intensely on specific periods.

Figure 8 illustrates the collaboration network of authors working in the field of reading skills for the visually impaired. In this map, each node represents an author, and the lines between nodes indicate co-authored publications. The node size reflects the number of collaborators an author has worked with, while colors represent clusters or groups of authors involved in joint projects.

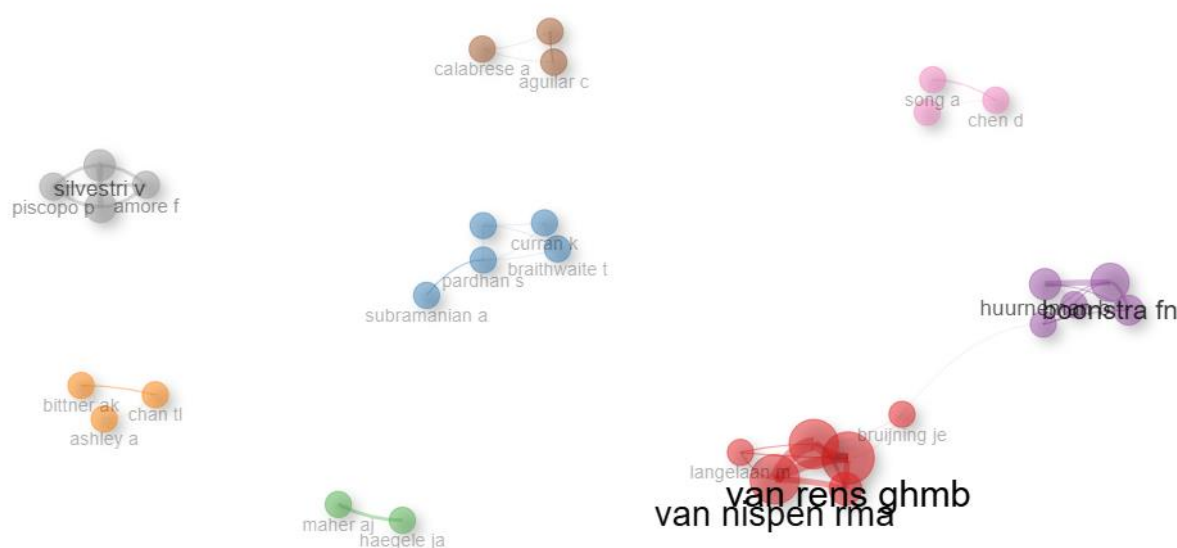


Figure 8. Authors collaboration network

The colored clusters observed in Figure 8 reveal that authors work in specific groups, with collaboration tendencies exhibiting clustering patterns. The red cluster, centered around Van Rens GHMB and Van Nispen RMA, forms an extensive collaboration network with authors such as Bruinjing JE and Langejaan M, emerging as the most active group in the field. The purple cluster, dominated by Huurneman B and Boonstra FN, displays strong internal collaboration with limited connections to Song A and Chen D. The gray cluster, formed by Silvestri V and Piscopo P Amore F, presents a small, isolated network, while the orange cluster brings together Bittner AK, Chan TL, and Ashley A, showing a narrower interaction scope. The blue cluster includes authors such as Calabrese A, Curran K, Subramanian A, and Pardhan S, offering a moderate collaboration network. The green cluster, represented by Mather A and Haegle JA, encompasses a small and limited group. These clusters demonstrate that the field has both centralized and dispersed collaboration dynamics, with different groups concentrating internally to contribute to the field.

Figure 9 illustrates the distribution of corresponding authors by country and the number of articles published by each country in the field of reading skills for the visually impaired.

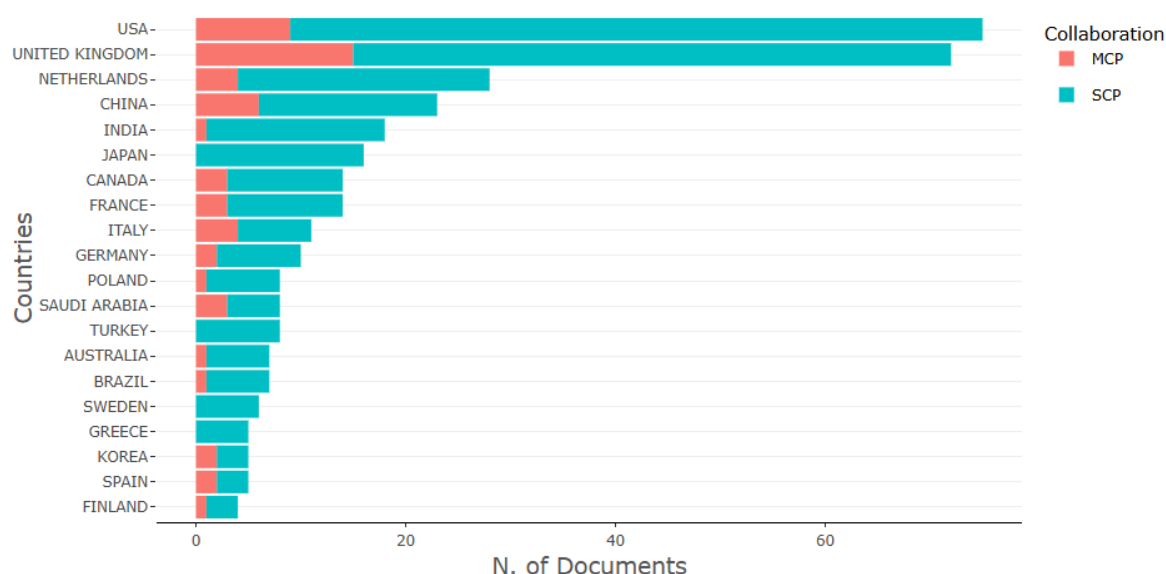


Figure 9. Countries of corresponding authors and number of articles

Figure 9 comparatively illustrates single-country publications (SCP, solid blue area) and multi-country publications (MCP, red area), taking international collaboration into account. Countries such as the United States, the United Kingdom, and China lead significantly in total article output, with the United States holding the top position with over 60 articles, predominantly from single-country studies (SCP). The United Kingdom and China also stand out with high numbers of both SCP and MCP, while countries like the Netherlands and India make notable contributions. Canada, France, Italy, and Germany exhibit moderate production with a balanced distribution between SCP and MCP. Countries such as Poland, Saudi Arabia, Turkey, Australia, Brazil, Sweden, South Korea, Spain, and Finland have produced fewer articles, primarily dominated by SCP. Overall, the graph reveals that research production in the field is largely centered in the United States and Europe, but the proportion of multi-country collaborations (MCP) is particularly prominent among top-ranking countries.

Figure 10 highlights the scientific productivity of the countries with the highest publication output in the field of reading skills for the visually impaired.

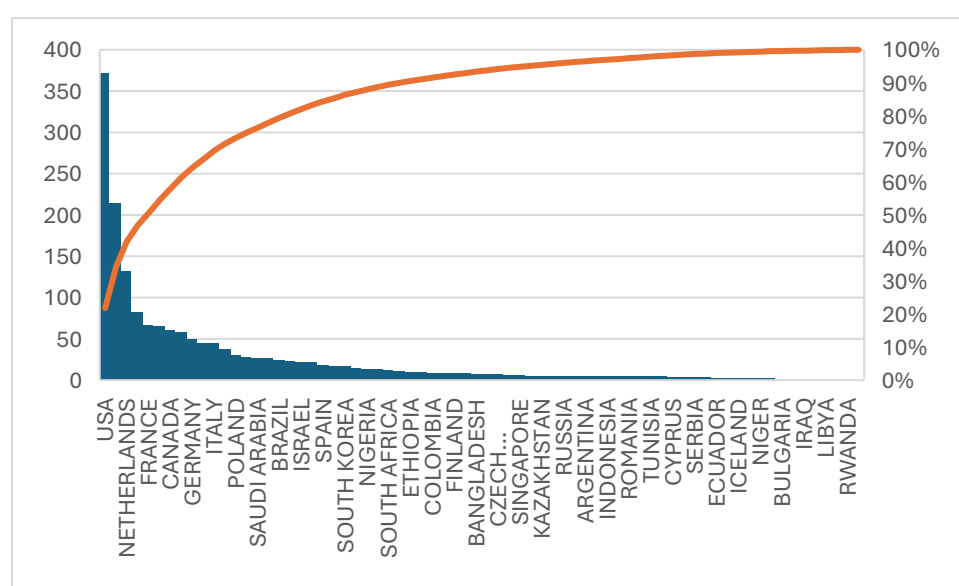


Figure 10. Scientific productivity of the countries with the highest number of publications

Figure 10 shows the United States (USA) leading with approximately 350 publications, demonstrating significant dominance in the field, followed by France (approximately 200 publications) and Canada (approximately 150 publications). The publication counts of countries are represented by a cumulative curve (similar to a Lorenz curve), illustrating a distribution that reaches 100% of total publications, indicating that a few leading countries dominate overall productivity. Countries such as Germany, Italy, Poland, Brazil, and Spain contribute at a moderate level, while South Africa, Ethiopia, and Finland have a more limited publication volume. The steep initial rise of the cumulative curve highlights that the majority of publications are produced by a small number of countries, with other countries being less represented in the field. This distribution underscores the geographical imbalance in scientific productivity, indicating that research is predominantly concentrated in developed countries.

Figure 11 reveals the scientific collaboration network among countries. The size of the nodes reflects the number of articles published by each country, while the lines between them represent co-authored publications between two countries.

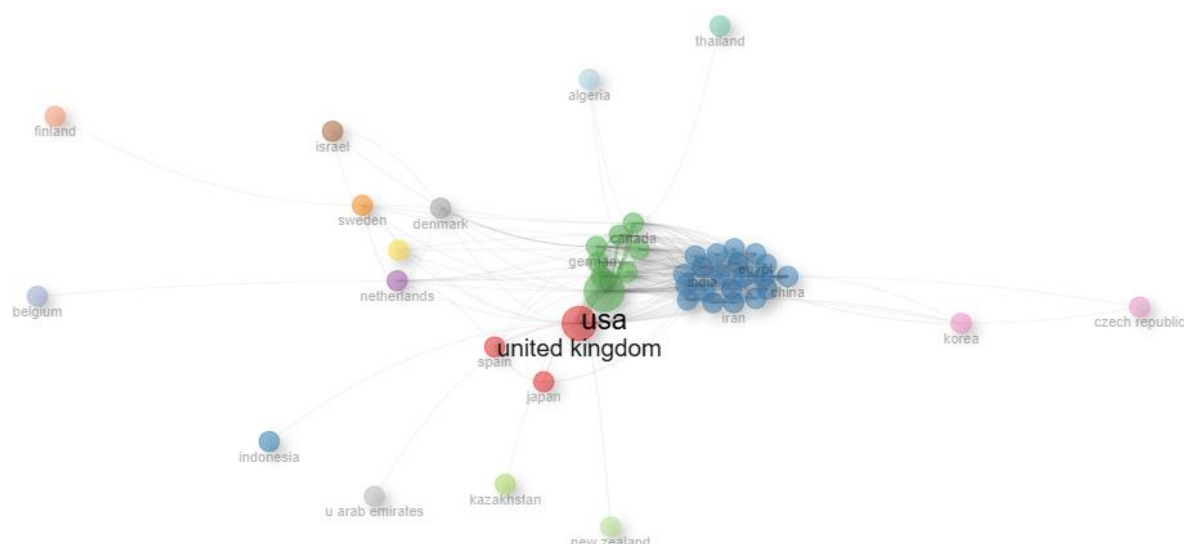


Figure 11. Cooperation between countries

According to Figure 11, the United States (USA) occupies the central position in the network with the largest node size, establishing an extensive collaboration network with numerous countries (e.g., the United Kingdom, Canada, China, Iran). The United Kingdom stands out as the second major hub, displaying a strong connection with the USA and collaborating with countries such as Canada, Germany, and Japan. Countries like China and Iran draw attention through their connections with the USA, while European nations such as the Netherlands, Spain, and Sweden have developed more limited but diverse collaborations. Countries including Israel, Finland, Belgium, Indonesia, Thailand, South Korea, and the Czech Republic are represented with smaller node sizes and fewer connections, indicating their more limited production and collaboration in the field. Overall, the network structure reveals that collaborations are largely centered around the USA and the United Kingdom, but other countries are increasingly joining this network, demonstrating the expansion of global research in the field.

RESULTS AND DISCUSSION

This study examines academic publications in the field of reading skills for the visually impaired through a bibliometric framework, systematically highlighting key trends and prominent themes. The findings indicate that this research area has been shaped by contributions from various disciplines over time, with technology-based approaches becoming notably prominent in recent years. The frequent use of keywords such as “Braille,” “assistive technology,” and “reading” reveals that both traditional and innovative methods are being addressed concurrently. Indeed, as Serputko (2022) noted, there has been an increase in studies between 2017 and 2021 focusing on the development and analysis of modern textbooks and educational materials specifically designed for visually impaired students, supporting the trend toward more accessible and inclusive education.

Evaluations based on the timeline reveal a consistent increase in the number of publications since 1981, but a reversal of this trend after 2020. This suggests that research activities have become more selective, though the possibility that the data collection process is not yet complete should also be considered. Additionally, this decline may be associated with globally impactful events such as the COVID-19 pandemic. Indeed, Singh et al. (2020) observed a significant increase in information literacy for visually impaired individuals between 1990 and 2018, and the publication year distribution obtained in this study supports these findings.

In the thematic analysis, various focus areas such as accessibility, education, Braille literacy, low vision, and technological adaptations have been observed to stand out. The clusters formed by visualizing the relationships between keywords clearly demonstrate the impact of interdisciplinary collaboration in the field. In particular, studies centered around artificial

intelligence and assistive technologies are understood to aim at making reading processes more accessible. Additionally, research focusing on the impact of educational interventions for children highlights the critical importance of supporting visually impaired individuals at an early age. In this context, assistive and digital technologies significantly enhance the educational processes of visually impaired students by improving communication, mobility, and environmental control skills (Ravichandran & Sujathamalini, 2023). Indeed, the hybrid artificial intelligence system developed by Wisdom et al. (2024) has improved the accuracy of object recognition, text-to-speech, and speech-to-text conversion functions by 92%, markedly enhancing the independence and accessibility levels of visually impaired individuals.

In terms of geographical distribution, the majority of publications are concentrated in countries such as the United States, the United Kingdom, and China, while contributions from developing countries remain limited. This situation can be attributed to many systemic and contextual factors. For example, limited access to research funding, lack of training in assistive technologies and infrastructure deficiencies in developing countries are frequently emphasised in the literature. In this context, Matter et al. (2017) state that research in the field of assistive technology in low- and middle-income countries (LMICs) is largely underfunded and only 5 to 15 per cent of individuals who need these technologies have access to relevant devices. Moreover, in many low- and middle-income countries, special education is still in the developmental stage and inclusive education policies may lack implementation support. Supporting this situation, Salehiamiri et al. (2025) stated that inclusive education for children with special needs in these countries is insufficient to fulfil their basic access rights. These factors limit academic participation and technological innovations in the field of visual impairment and reading skills. Thus, low scientific production from developing countries is considered to be not only a quantitative deficiency but also a reflection of structural inequalities in global knowledge production. International collaboration networks exhibit a similar distribution, with certain hubs playing a more active role in global partnerships. The relatively lower participation of countries like Turkey in these networks suggests potential for increasing collaboration opportunities.

Author-level analyses reveal that some researchers focus intensively on specific themes, with strong internal collaborations. However, the observed decline in individual productivity in recent years suggests that various factors, such as funding constraints or shifting research priorities, may be at play. Journal analyses demonstrate that the field draws from diverse disciplines, including ophthalmology and educational sciences, thereby reinforcing the interdisciplinary nature of the study.

Certain limitations of this study should also be considered. First, relying solely on the Web of Science database for data collection may not provide a complete picture of the literature. Additionally, the exclusion of publications in languages other than English and Turkish may limit the representation of global contributions. Furthermore, the lack of contextual depth in bibliometric methods can impose constraints on assessing the qualitative impact of publications.

Nevertheless, the findings offer several directions for the field. First, research capacity in developing countries should be enhanced, and academics from these regions should be encouraged to participate more in global collaborations. Second, educational policies should be structured to initiate supportive interventions for visually impaired children at an early age. Finally, integrating technological solutions with pedagogical approaches can enhance equal access to education for visually impaired individuals.

Overall, this study has elucidated the scope and trends of research in the field of reading skills for the visually impaired, establishing a robust reference point for future studies. It has also highlighted gaps in the literature and opportunities for collaboration, contributing to the shaping of research policies toward a more inclusive and accessible academic environment.

Recommendations for Future Research

Future studies should focus on increasing pilot applications and practice-based research aimed at integrating artificial intelligence and assistive technologies—such as Braille systems, screen

readers, audiobooks, tactile displays, and visual recognition software—into educational processes. These technologies hold significant potential for enhancing the reading skills of visually impaired individuals. Indeed, research has demonstrated that AI-supported mobile applications promote inclusivity by providing real-time information, thereby improving the quality of life and accessibility for visually impaired individuals (Lalitendra et al., 2024). Additionally, Kapadia et al. (2024) note that assistive technologies, leveraging traditional and deep learning techniques for object detection, text recognition, and text-to-speech synthesis, enable visually impaired individuals to lead more independent lives.

The current literature predominantly relies on English-language publications. However, studies conducted in different languages and cultural contexts could contribute to understanding diverse strategies for developing reading skills. Therefore, comparative analyses using multilingual datasets should be encouraged. While bibliometric analyses are useful for revealing general trends in the field, they may not fully capture individual experiences, teachers' perspectives, or the practical challenges faced by visually impaired individuals. Consequently, it is recommended that future studies incorporate qualitative data collection techniques to examine user experiences in greater depth. In addition, it is thought that qualitative studies to be conducted contextually in Turkey will provide important contributions in future research. Especially in Turkey, where the integration of assistive technologies into inclusive education is still developing, qualitative studies with teachers, special education specialists and visually impaired students can reveal the difficulties in implementation and local needs. These studies could explore issues such as how Braille instruction is implemented in mainstream classrooms, the barriers teachers face when using digital tools, and how culturally appropriate strategies improve reading skills. Such context-sensitive research will not only contribute to the international literature but also to the shaping of national educational policies and teacher education programmes.

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Evaluation of the Relationship Between Pre-Service Teachers' Pre-Professional Identity Perceptions and Epistemological Beliefs

Remzi YILDIRIM¹Metin AŞÇI²

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Abstract

The aim of this study is to evaluate the relationship between pre-service teachers' preprofessional identity perceptions and epistemological beliefs. For this purpose, 1398 pre-service teachers studying at MCBÜ Faculty of Education in the Spring Semester of 2024-2025 Academic Year were identified and 227 pre-service teachers were included in the study group with voluntary participation. The 227 pre-service teachers in the study group met the number of participants required for a 5% margin of error and 90% confidence level in the context of the study population consisting of 1398 pre-service teachers. For the data needed in the study, a personal information form was used in the first part. Through the personal information form, data were collected about the gender of the participants and the undergraduate program they were enrolled in. For the data needed in the study, a personal information form was used in the first part. Through the personal information form, data were collected about the gender of the participants and the undergraduate program they were enrolled in. In the second part, "Epistemological Beliefs Scale" (Akçay, Gezer & Akçay, 2016) was used as a 5-point Likert Rating Scale and in the third part, "Early Teacher Identity Measure" (Arpacı & Bardakçı, 2015) was used. After the collected data were transferred to the computer environment, the data analysis process was started with the SPSS25 package program. The results of the study showed that there was a low-level positive relationship between pre-service teachers' epistemological beliefs and their pre-professional teacher identities.

Keywords: Pre-service teachers, Teacher Identity, Epistemological beliefs

INTRODUCTION

The teaching profession is one of the most widely recognized professions on a global scale. When the studies on the subject are examined, it is estimated that over 50 million teachers will take office in the next 20 years and the number of teachers on duty will reach approximately 200 million (Billingsley, Griffin, Smith, & Kamman, 2009). From the point of view of training individuals who can adapt to a rapidly changing world, the importance of training teachers with such a large population with the desired quality is obvious. For this reason, the questions about the competencies that prospective teachers should have in the future and how to provide them with these competencies are still the current topics of study in the field of educational sciences. The issue of teacher identity, which has been addressed more frequently by some studies (Reeves, 2018), (Miller, 2009) and (Olsen, 2016), is as important as prospective teachers' content knowledge competencies and general culture competencies.

Identity is an integrity, coherence and continuity formed because of mutual interactions and communication with the whole external environment as well as the internal dynamics of the organism (Izdania, 2014). When the structuring process is examined, it is seen that identity is affected by many factors belonging to cultural, social, and political contexts in people's lives

¹Assoc.Prof.Dr., Kırklareli University, Faculty of Science and Letter, Türkiye, yildirimremzi@hotmail.com ORCID: <https://orcid.org/0000-0002-6918-5416>

²Corresponding Author: Assist.Prof.Dr., Manisa Celal Bayar University, Faculty of Education, Türkiye, okanmetin_asci@hotmail.com Orcid: <https://orcid.org/0000-0002-2526-0437>

(Swaan, Bosson, & Pennebaker 2010; Shoemaker & Tobia, 2019). Teacher identity refers to a personal understanding shaped by how teachers see themselves and who they aspire to become. This identity develops gradually through teaching experiences and professional growth. For pre-service teachers, the shift from their personal identity to a recognized teacher identity is a key part of their training. Reflecting on how they currently view themselves and the kind of teacher they hope to be is an important step in their preparation process.

Pre-service teachers should be given information about the importance and necessity of teacher identity in their education, and the formation they receive should be organized in a way that will help them form a professional identity. It is also a matter of debate to what extent teacher training models should consider the results of scientific studies that emphasize the importance of candidates gaining not only knowledge, values, and attitudes but also a teacher identity, and to what extent these results are reflected in teacher training programs. When the factors affecting teacher identity are examined, it is seen that identity is shaped by personal, psychological, social, early childhood and pre-service education experiences (Barkhuizen, 2019), (Knowles, 1992) (Beijaard, Verloop, & Vermunt, 2000). The fact that the desired level of teacher identity depends on many variables mentioned above shows how complex the process is.

Pre-service teachers are “active players in their own educational processes and some studies (Aydınlı and Avcı 2010) reveal that creating identity for themselves is as important as creating knowledge, not transferring knowledge.

Pre-service teachers' perspectives on knowledge and its construction reflect their epistemological beliefs. Essentially, epistemology is accepted as a theory of knowledge and is a branch of philosophy that reveals the beliefs of individuals about how to access and evaluate scientific knowledge and explains how they construct their own knowledge (Schommer, 1990; Tsai, 2000). The second half of the 20th century was the time when the relationship between epistemology and educational issues began to be investigated. Perry (1981) is recognized as the pioneer of the studies linking epistemological beliefs and educational issues. Schommer (1990) explains epistemology as understanding what knowledge is and how knowledge learning takes place. “Innate Ability”, ‘Simple Knowledge’, ‘Fast Learning’, ‘Certain Knowledge’ and ‘Omniscient Knowledge’ are the five dimensions Schommer identifies for epistemological knowledge.

Pre-service teachers' beliefs about how scientific knowledge is constructed and evaluated in their pre-service education are also important in terms of the teacher identities they must develop in the process. Especially their beliefs that knowledge is absolute and unchanging are closely related to who they are and who they want to be in terms of their identities. Brownlee (2014) discussed that the attitudes of pre-service teachers, especially those who are trying to be trained as science educators, towards scientific knowledge instead of the mere transfer of the knowledge they see as unchangeable, which is only produced, is a situation that needs to be considered. It is thought that this problem is closely related to the teacher identities that pre-service teachers will form.

When the related literature is examined, there are some studies (Taşkın, 2013), (Aypay, 2011), (Demir, 2012), (Baltacı, 2013) (Bakır & Adak, 2014) (Gülev, 2015) (Biçer, Hafize, & Özer, 2013) (Gürol, 2010) (Aslan & Aybek, 2018). Frequently, the prominent research topics in the studies conducted in the field of science teaching are the studies that relate pre-service teachers' epistemological beliefs with self-esteem, self-efficacy, educational philosophies they adopt, teaching methods they will apply and different variables. There is no study on the relationship between pre-service teachers' epistemological beliefs and their teacher identities.

Purpose of the Research

The aim of this study is to evaluate pre-service teachers' teacher identities and their epistemological beliefs about scientific knowledge in terms of some variables. In line with this general purpose, answers to the following questions have been sought;

1. What is the level of pre-service teachers' epistemological beliefs?
2. What is the level of pre-service teachers' preprofessional teacher identities?

3. Is there a significant difference in pre-service teachers' epistemological beliefs according to their gender and the undergraduate program they are enrolled in?

4. Is there a significant difference in preprofessional teacher identities of pre-service teachers according to their gender and the undergraduate program they are enrolled in?

5. Is there a significant relationship between pre-service teachers' epistemological beliefs and pre-professional teacher identities?

METHOD

In this section; study model, study group, data collection tools, data collection process and data analysis are explained.

Model of the Study

Quantitative research method was used in the study. According to Büyüköztürk et.al. (2013), quantitative research methods enable the researcher to observe, measure, and analyse independently and objectively. Quantitative research methods can be used through two main models: survey and experimental (Şimşek, 2012). The feature of the survey model is that it can describe the situation as it is (Karasar, 2012). The study was conducted according to the relational survey model.

Study Group

As the study population; 1398 pre-service teachers studying at MCBÜ Faculty of Education in the Spring Semester of 2024-2025 Academic Year were determined. The study group consisted of 227 pre-service teachers with voluntary participation. The 227 pre-service teachers in the study group met the number of participants required for a 5% margin of error and 90% confidence level in the context of the study population of 1398 pre-service teachers (Şahin, 2012). Information about the pre-service teachers in the study group is given in Table 1.

Table 1. Study Group

Registered Undergraduate Program	Female	Male	N
Primary school mathematics teaching	31	5	36
Guidance and psychological counselling	85	18	103
Primary school teaching	44	9	53
Social studies teaching	13	6	19
Turkish language teaching	14	2	16
Total	187	40	227

As seen on Table 1, totally 227 pre-service teachers involved in the study. There were 187 female participants, and 40 male participants. Whole participants were from five different teacher education programs.

Data Collection Tools

The measurement tool used in the study was composed of three sections. In the first part, a personal information form was used. Through the personal information form, data were collected about the gender of the participants and the undergraduate program they were enrolled in.

In the second part, the measurement tool named "Epistemological Beliefs Scale" (Akçay, Gezer & Akçay, 2016) was used as a 5-point Likert Rating Scale. The scale was used to collect information about pre-service teachers' epistemological beliefs. The original version of the scale was developed by Conley, Pintrich, Vekiri & Harrison (2004), translated into Turkish by Özkan (2008) and adapted into Turkish by Akçay, Gezer & Akçay (2016). The final version of the adaptation study, in which 424 pre-service teachers participated, was obtained with 19 items and 3 factors. The factors were named as Justification of knowledge, Source / certainty of knowledge and

Development of knowledge. All the factors explained 47.43% of the total variance. Cronbach's alpha coefficient of the scale was $\alpha=.853$. Akçay, Gezer & Akçay (2016) found the values obtained for confirmatory factor analysis (CFA) of the scale they adapted as given in Table 2 and presented the scale for use in related scientific studies.

Table 2. Summary of CFA (Epistemological Beliefs Scale)

χ^2/df	p	CFI	GFI	AGFI	SRMR	RMSEA
2.538	$p<.01$	.960	.910	.890	.066	.060

As seen on Table 2 the values show that Epistemological Beliefs Scale can be used for related studies as a data collection tool.

In the third part, the measurement tool named "Early Teacher Identity Measure" (Arpacı & Bardakçı, 2015) was used as a 5-point Likert Rating Scale. The scale was used to collect information about pre-service teachers' preprofessional teacher identities. The original version of the scale was developed by Friesen & Besley (2013) and adapted into Turkish by Arpacı & Bardakçı (2015). The final version of the adaptation study, in which 449 pre-service teachers participated, was obtained with 17 items and 3 factors. The factors were named as Self-categorization as a teacher, Confidence in becoming a teacher and Participation as a teacher. All the factors explained 55.67% of the total variance. Cronbach's alpha coefficient of the scale was obtained as $\alpha=.930$. Arpacı & Bardakçı (2015) found the values obtained for confirmatory factor analysis (CFA) of the scale they adapted as given in Table 3 and presented the scale for use in related scientific studies.

Table 3. Summary of CFA (Early Teacher Identity Measure)

χ^2/df	p	CFI	NFI	NNFI	SRMR	RMSEA
3.980	$p<.01$	.970	.960	.970	.050	.080

As seen on Table 3, the values show that Early Teacher Identity Measure can be used for related studies as a data collection tool.

Data Collection Process

Depending on the design of the study, the researchers first searched for measurement tools that could collect data on pre-service teachers' epistemological beliefs and preprofessional teacher identities and decided on the scales included in this study. Then, the academicians who conducted the relevant scale studies were contacted via e-mail and their permission to use the scales was obtained. Subsequently, ethics committee permission was obtained from MCBU Social and Human Sciences Scientific Research and Publication Ethics Committee with the meeting decision dated 24.01.2025 and numbered 2025/01.

The measurement tool, which was designed in three parts as personal information form, epistemological belief scale and preprofessional teacher identity scale before the related permission applications, was started to be applied after the completion of the permission process.

In the data collection process, the measurement tool was converted into a printed form and the data were collected by applying it to the study group formed with the voluntary participation of pre-service teachers.

In this way, a total of 231 data forms were collected. However, during the data entry into the computer environment, 4 forms that were damaged to the extent that they could not be read were detected. The 4 damaged forms were cancelled and the data was entered into the computer environment on the remaining 227 forms and the data collection process was completed.

Process

After transferring the collected data to the computer environment, the data analysis process was started with the SPSS25 package program.

Analysis of Data

First, the Kolmogorov Smirnov Normal Distribution Test was applied to the data to decide whether parametric or nonparametric tests should be applied in the analysis of the data.

According to the normal distribution test results of the Epistemological Beliefs Scale; $p=.036$ ($p<.05$) for the whole scale, $p=.000$ ($p<.05$) for the “justification of knowledge” dimension, $p=.006$ ($p<.05$) for the “source/invariance of knowledge” dimension and $p=.000$ ($p<.05$) for the “development of knowledge” dimension. It was determined that the data belonging to the whole and all sub-dimensions of the Epistemological Beliefs Scale did not show normal distribution.

According to the normal distribution test results of the Pre-Professional Teacher Identity Scale; $p=.012$ ($p<.05$) for the whole scale, $p=.010$ ($p<.05$) for the dimension of “Categorizing oneself as a teacher”, $p=.001$ ($p<.05$) for the dimension of “Confidence in being a teacher” and $p=.000$ ($p<.05$) for the dimension of “Taking part as a teacher”. It was determined that the data for the whole and all sub-dimensions of the Preprofessional Teacher Identity Scale did not show normal distribution.

According to the Kolmogorov Smirnov Normality Test results, the data did not show normal distribution. It was decided to apply nonparametric tests in the analysis of the data.

The level of pre-service teachers' Epistemological Beliefs and Preprofessional Teacher Identities were revealed by looking at the minimum, maximum, mean ($\bar{x}$) and standard deviation (sd) values through diagnostic Statistics.

Then, Mann Whitney U Test was applied to analyse whether the data obtained in accordance with the other sub-problems in the study showed a significant difference according to gender and Kruskal Wallis Test was applied to analyse whether there was a significant difference according to the undergraduate program enrolled.

Finally, the relationship between pre-service teachers' Epistemological Beliefs and Pre-Professional Teacher Identities was analysed with Spearman Rank Difference Correlation Coefficient.

Results

In this section, the data were analysed in accordance with the order of the sub-problems in the study and the findings obtained are presented.

Results Related to the First Sub-Problem

The first sub-problem was formulated as “What is the level of pre-service teachers' epistemological beliefs?” and the diagnostic statistics related to the epistemological belief levels of pre-service teachers according to the data obtained are presented in Table 4.

Table 4. Descriptive Statistics of Pre-Service Teachers' Epistemological Belief Levels

Dimension / Scale	N	Minimum	Maximum	$\bar{x}$	sd
Justification of knowledge dimension	227	2.43	5.00	4.14	.489
Source / certainty of knowledge dimension	227	1.00	3.86	2.09	.659
Development of knowledge dimension	227	2.20	5.00	4.03	.593
Epistemological Belief Scale	227	2.26	4.47	3.36	.364

As seen on Table 4, the pre-service teachers evaluated all the questions of the Epistemological Belief Scale with an arithmetic mean score of 3.36 (somewhat agree). The lowest arithmetic mean

score was found to be 2.26 (somewhat agree) and the highest arithmetic mean score was found to be 4.47 (completely agree).

The pre-service teachers evaluated all the questions belonging to the Dimension of Justification of Knowledge with an arithmetic mean score of 4.14 (strongly agree). The lowest arithmetic mean score was 2.43 (slightly agree) and the highest arithmetic mean score was 5.00 (completely agree). The item "Ideas in science can emerge from the questions you ask yourself about the subject and your experimental studies." in the Dimension of Justification of Knowledge received the lowest arithmetic mean score of 3.50 (strongly agree). The item "There can be more than one way to test ideas in scientific studies." in the Dimension of Justification of Knowledge received the highest arithmetic mean score of 4.40 (completely agree).

The pre-service teachers evaluated all the questions belonging to the Source/Invariance of Knowledge Dimension with an arithmetic mean score of 2,09 (slightly agree). The lowest arithmetic mean score was found to be 1,00 (strongly disagree) and the highest arithmetic mean score was found to be 3,86 (strongly agree). The item "Everything the teacher says in class is true." in the Source/Invariance of Knowledge Dimension received the lowest arithmetic mean score of 1.67 (strongly disagree). The item "You can be sure that what you read in scientific books is true." in the Source/Invariance of Knowledge Dimension received the highest arithmetic mean score of 2.73 (somewhat agree).

The pre-service teachers evaluated all the questions belonging to the Development of Knowledge Dimension with an arithmetic mean score of 4.03 (strongly agree). The lowest arithmetic mean score was 2.20 (slightly agree) and the highest arithmetic mean score was 5.00 (completely agree) in the evaluation of the pre-service teachers for all the questions belonging to the Development of Knowledge Dimension. The item "Some scientific ideas today are different from what scientists thought before." in the Development of Knowledge Dimension received the lowest arithmetic mean score of 3.83 (strongly agree). The item "Scientific ideas can sometimes change." in the Development of Knowledge Dimension received the highest arithmetic mean score of 4.23 (completely agree).

Results Related to the Second Sub-Problem

The second sub-problem was posed as "What is the level of preprofessional teacher identities of pre-service teachers?" and the descriptive statistics of pre-service teachers' preprofessional teacher identity levels are presented in Table 5.

Table 5. Descriptive Statistics of Pre-Service Teachers' Early Teacher Identity Levels

Dimension / Scale	N	Minimum	Maximum	$\bar{x}$	<i>sd</i>
Self-categorization as a teacher dimension	227	1.40	5.00	3.58	.818
Confidence in becoming a teacher dimension	227	1.33	5.00	3.81	.653
Participation as a teacher dimension	227	2.17	5.00	3.84	.693
Early Teacher Identity Measure	227	2.24	4.82	3.70	.579

As seen on Table 5, the pre-service teachers evaluated all the questions of the Pre-Professional Teacher Identity Scale with an arithmetic mean score of 4.82 (completely agree). The lowest arithmetic mean score was 2.24 (I somewhat agree) and the highest arithmetic mean score was 4.82 (I completely agree) in the pre-service teachers' evaluation of all the questions of the Pre-Professional Teacher Identity Scale.

The pre-service teachers evaluated all the questions belonging to the Self-Categorization as a Teacher Dimension with an arithmetic mean score of 3.58 (strongly agree). The lowest arithmetic mean score was 1.40 (strongly disagree) and the highest arithmetic mean score was 5.00 (strongly agree). The item "I can easily characterize myself as a teacher" in the Self-Categorization as a Teacher Dimension received the lowest arithmetic mean score of 3.26 (somewhat agree). The

item “I have difficulty thinking of myself as teaching a group of children or adults” in the Self-Categorization as a Teacher Dimension received the highest arithmetic mean score of 4.05 (strongly agree).

The pre-service teachers evaluated all the questions related to the Confidence in Being a Teacher Dimension with an arithmetic mean score of 3.81 (strongly agree). The lowest arithmetic mean score was found to be 1.33 (strongly disagree) and the highest arithmetic mean score was found to be 5.00 (strongly agree). The item “I often have doubts about my competencies to be a good teacher” in the Confidence in Being a Teacher Dimension received the lowest arithmetic mean score of 3.44 (strongly agree). The item “I have no idea what it means to be a good teacher” in the Confidence in Being a Teacher Dimension received the highest arithmetic mean score of 4.32 (completely agree).

The pre-service teachers evaluated all the questions belonging to the Dimension of Taking Part as a Teacher with an arithmetic mean score of 3.84 (strongly agree). The lowest arithmetic mean score was found to be 2.17 (slightly agree) and the highest arithmetic mean score was found to be 5.00 (completely agree). The item “I am often consulted by my family and friends about working with and caring for children or adults” in the Dimension of Being Involved as a teacher received the lowest arithmetic mean score of 3.25 (somewhat agree). The item “Helping a child learn something new is a source of happiness for me.” in the dimension of Taking Part as a teacher received the highest arithmetic mean score of 4.31 (completely agree).

Findings Related to the Third Sub-Problem

The third sub-problem was formulated as “Is there a significant difference in the epistemological beliefs of pre-service teachers according to their gender and the undergraduate program they are enrolled in?” and Table 6 shows whether there is a significant difference in the epistemological beliefs of pre-service teachers according to their gender, and Table 7 shows whether there is a significant difference in the epistemological beliefs of pre-service teachers according to the undergraduate program they are enrolled in.

Table 6. Mann Whitney U Test Results of Pre-Service Teachers’ Epistemological Beliefs According to their Gender

Dimension / Scale	Gender	N	Mean Rank	Mean Sum	<i>U</i>	<i>z</i>	<i>p</i>
Justification of knowledge dimension	Female	187	114.92	21490.00	3568.00	-.459	.646
	Male	40	109.70	4388.00			
Source / certainty of knowledge dimension	Female	187	111.91	20926.50	3348.50	-1.041	.298
	Male	40	123.79	4951.50			
Development of knowledge dimension	Female	187	114.06	21330.00	3728.00	-.032	.974
	Male	40	113.70	4548.00			
Epistemological Belief Scale	Female	187	112.69	21073.00	3495.00	-.651	.515
	Male	40	120.13	4805.00			

When Table 6 is examined, according to the results of Mann Whitney U Test applied on the basis of gender variable, the scores of pre-service teachers from the whole epistemological belief scale ($U=3495,00$, $z=-,651$, $p=,515$), the scores from the dimension of realization of knowledge ($U=3568,00$, $z=-,459$, $p=,646$), source/invariance of knowledge dimension ($U=3348,50$, $z=-1,041$, $p=,298$), and development of knowledge dimension ($U=3728,00$, $z=-,032$, $p=,974$) did not show a significant difference.

Table 7. Kruskal Wallis Test Results of Pre-Service Teachers' Epistemological Beliefs According to their Registered Undergraduate Programs

Dimension / Scale	Registered Undergraduate Program	N	Mean Rank	χ^2	df	p
Justification of knowledge dimension	Primary school mathematics teaching	36	122.10	2.090	4	.719
	Guidance and psychological counseling	103	113.00			
	Primary school teaching	53	118.46			
	Social studies teaching	19	104.26			
	Turkish language teaching	16	99.03			
Source / certainty of knowledge dimension	Primary school mathematics teaching	36	101.71	5.752	4	.218
	Guidance and psychological counseling	103	118.68			
	Primary school teaching	53	104.25			
	Social studies teaching	19	139.08			
	Turkish language teaching	16	114.06			
Development of knowledge dimension	Primary school mathematics teaching	36	114.72	7.788	4	.100
	Guidance and psychological counseling	103	102.13			
	Primary school teaching	53	131.77			
	Social studies teaching	19	119.97			
	Turkish language teaching	16	122.81			
Epistemological Belief Scale	Primary school mathematics teaching	36	109.96	1.304	4	.861
	Guidance and psychological counseling	103	111.43			
	Primary school teaching	53	118.23			
	Social studies teaching	19	126.92			
	Turkish language teaching	16	110.28			

When Table 7 is examined, according to the results of the Kruskal Wallis Test applied on the basis of the undergraduate program enrolled, the scores of the pre-service teachers from the whole epistemological belief scale ($\chi^2=1,304$, $df=4$, $p=.861$), The scores they received from the dimension of actualization of knowledge ($\chi^2=2,090$, $df=4$, $p=.719$), the scores they received from the dimension of source/invariance of knowledge ($\chi^2=5,752$, $df=4$, $p=.218$), the scores they received from the dimension of development of knowledge ($\chi^2=7,788$, $df=4$, $p=.100$) did not show a significant difference.

Results Related to the Fourth Sub-Problem

The fourth sub-problem was posed as "Is there a significant difference in preprofessional teacher identities according to the gender and undergraduate program of pre-service teachers?" and Table 8 shows whether there is a significant difference in preprofessional teacher identities according to the gender of pre-service teachers, and Table 9 shows whether there is a significant difference in preprofessional teacher identities according to the undergraduate program of pre-service teachers.

Table 8. Mann Whitney U Test Results of Pre-Service Teachers' Early Teacher Identity According to their Gender

Dimension / Scale	Gender	N	Mean Rank	Mean Sum	<i>U</i>	<i>z</i>	<i>p</i>
Self-categorization as a teacher dimension	Female	187	114.37	21387.00	3671.00	-.184	.854
	Male	40	112.28	4491.00			
Confidence in becoming a teacher dimension	Female	187	112.21	20983.50	3405.50	-.890	.373
	Male	40	122.36	4894.50			
Participation as a teacher dimension	Female	187	115.51	21599.50	3458.50	-.749	.454
	Male	40	106.96	4278.50			
Early Teacher Identity Measure	Female	187	114.89	21483.50	3574.50	-.439	.660
	Male	40	109.86	4394.50			

When Table 8 is examined, according to the Mann Whitney U Test results applied on the basis of gender variable, the scores of pre-service teachers from the whole preprofessional teacher identity scale ($U=3574,50$, $z=-,439$, $p=,660$), scores on the self-categorization as a teacher dimension ($U=3671,00$, $z=-,184$, $p=,854$), confidence in being a teacher dimension ($U=3405,50$, $z=-,890$, $p=,373$), and taking part as a teacher dimension ($U=3458,50$, $z=-,439$, $p=,660$) did not show a significant difference.

Table 9. Kruskal Wallis Test Results of Pre-Service Teachers' Epistemological Beliefs According to their Registered Undergraduate Programs

Dimension / Scale	Registered Undergraduate Program	N	Mean Rank	χ^2	<i>df</i>	<i>p</i>
Self-categorization as a teacher dimension	Primary school mathematics teaching	36	127.25	17.479	4	.002
	Guidance and psychological counseling	103	95.17			
	Primary school teaching	53	1243.44			
	Social studies teaching	19	146.21			
	Turkish language teaching	16	135.91			
Confidence in becoming a teacher dimension	Primary school mathematics teaching	36	118.40	5.422	4	.247
	Guidance and psychological counseling	103	103.30			
	Primary school teaching	53	124.55			
	Social studies teaching	19	121.18			
	Turkish language teaching	16	129.53			
Participation as a teacher dimension	Primary school mathematics teaching	36	128.93	10.884	4	.028
	Guidance and psychological counseling	103	100.18			
	Primary school teaching	53	115.98			
	Social studies teaching	19	142.05			
	Turkish language teaching	16	129.47			
Early Teacher Identity Measure	Primary school mathematics teaching	36	129.06	14.218	4	.007
	Guidance and psychological counseling	103	96.61			
	Primary school teaching	53	122.88			
	Social studies teaching	19	139.42			
	Turkish language teaching	16	132.50			

When Table 9 is examined, according to the results of the Kruskal-Wallis Test applied based on the undergraduate program enrolled, the scores of pre-service teachers on the dimension of confidence in becoming a teacher ($X^2=5,422$, $df=4$, $p=.247$) did not show a significant difference. In addition, according to the results of the Kruskal Wallis Test applied on the basis of the undergraduate program enrolled, the scores of the pre-service teachers from the whole preprofessional teacher identity scale ($X^2=14,218$, $df=4$, $p=.8007$), the scores they received from the dimension of self-categorization as a teacher ($X^2=17,479$, $df=4$, $p=.002$), the scores they received from the dimension of taking place as a teacher ($X^2=10,884$, $df=4$, $p=.028$) showed a significant difference. Beyond the standard Kruskal-Wallis test, pairwise comparisons were made with the Dunn-Bonferonni correction to determine which groups were different for the cases where there was a significant difference. However, because of the application of the Dunn-Bonferonni correction, it was determined that there was a significant difference only between the scores obtained from the dimension of self-categorization as a teacher and that this difference occurred at a low effect size (.28) between the students enrolled in the PDR and Social Studies Teaching Program.

Results Related to the Fifth Sub-Problem

The fifth sub-problem was formulated as “Is there a significant relationship between pre-service teachers' epistemological beliefs and pre-professional teacher identities?” and the significant relationship matches between pre-service teachers' epistemological beliefs and pre-professional teacher identities are presented in Table 10.

Table 10. Spearman's Rank Correlation Analysis Between Epistemological Belief and Early Teacher Identity of Pre-Service Teachers

Correlated Items	n	r_s	p
Justification of knowledge – Self-categorization as a teacher	227	.142	.032
Justification of knowledge – Participation as a teacher	227	.249	.000
Justification of knowledge – Early Teacher Identity	227	.224	.001
Source / certainty of knowledge – Participation as a teacher	227	-.139	.036
Source / certainty of knowledge – Early Teacher Identity	227	-.137	.039
Development of knowledge – Self-categorization as a teacher	227	.321	.000
Development of knowledge – Confidence in becoming a teacher	227	.195	.003
Development of knowledge – Participation as a teacher	227	.306	.000
Development of knowledge – Early Teacher Identity	227	.354	.000
Self-categorization as a teacher – Justification of knowledge	227	.142	.032
Self-categorization as a teacher – Epistemological Belief	227	.141	.034
Participation as a teacher – Epistemological Belief	227	.141	.034
Epistemological Belief – Early Teacher Identity	227	.162	.014

When Table 10 is examined, it is found that there is a positive, low level ($r_s=.16$, $p=.01$) significant relationship between pre-service teachers' epistemological beliefs and their pre-professional teacher identities.

A negative, low level ($r_s=-.13$, $p=.03$) significant relationship was found between the source/invariance of knowledge dimension and preprofessional teacher identity, and a negative, low level ($r_s=-.13$, $p=.03$) significant relationship was found between the source/invariance of knowledge dimension and being a teacher dimension. The lowest positive correlation was observed at a low level ($r_s=.14$, $p=.03$) between the self-categorization as a teacher dimension and

epistemological beliefs. The highest positive relationship was found between the development of knowledge dimension and preprofessional teacher identity at a medium level ($r_s=.35, p=.00$).

Result and Discussion

In this section, the results of the study are presented in the light of the findings obtained in the study and a discussion is made in the light of the related literature.

When the responses of the pre-service teachers to the whole epistemological belief scale are examined, it is seen that the scores are at a medium level, while a high score is observed in the dimensions of justification of knowledge and development of knowledge. On the other hand, it was determined that there was a moderate tendency in the sub-dimensions of the source/invariance of knowledge. This finding reveals an understanding that pre-service teachers do not attribute an absolute and unchanging meaning to knowledge, but it also reveals that scientists' perspectives on knowledge differ from other people. The results of the studies conducted by Turgut, Öztürk, and Eş (2017) and Yenice and Atmaca (2017) are like this result.

The responses of the pre-service teachers included in the study to the epistemological belief scale and its sub-dimensions do not show a significant difference in terms of both gender and the program they are enrolled in. While this result is like the results of Demir (2012)'s study, it differs from the results of the study conducted by Deryakulu and Büyüköztürk (2005) to determine the epistemological beliefs of pre-service teachers in terms of both gender and program of enrolment.

On the other hand, it is seen that pre-service teachers' perceptions of their pre-professional teacher identities are quite high. It was concluded that both their categorization of themselves as a teacher, their self-confidence in the profession and their positioning themselves within the teaching profession were at the desired level in terms of their teacher identities. In Yeşilyurt's (2011) and Çekin's (2013) studies, the results of Yeşilyurt's (2011) and Çekin's (2013) findings that pre-service teachers were "quite adequate" in terms of giving importance to national and universal values and "adequate" in terms of ensuring personal development support the results of this study. In addition, the scores of pre-service teachers from the whole preprofessional teacher identity scale, the scores from the dimension of categorizing oneself as a teacher, and the scores from the dimension of taking part as a teacher showed a significant difference based on the variable of the undergraduate program enrolled in. As a result of the pairwise comparisons, it was concluded that there was a significant difference only between the scores obtained from the dimension of self-categorization as a teacher and that this difference occurred at a low effect size between the students enrolled in the PDR and Social Studies Teaching Program. When the studies on pre-service teachers' opinions, attitudes and perceptions towards some variables are examined, there are studies (Ekici, 2014), (Özbek, Kahtaoglu, & Özgen, 2007) (Aydın, Ömür, & Argon, 2015) (Terzi & Tezci, 2007) in which significant differences emerged regarding the department of enrollment.

Finally, it was concluded that there was a low-level positive relationship between pre-service teachers' epistemological beliefs and their pre-professional teacher identities, and there was a negative relationship between some sub-dimensions of the two scales (source/invariance of knowledge dimension and taking part as a teacher dimension and source/invariance of knowledge dimension and pre-professional teacher identity).

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Examining University Students' Acceptance of Online Learning in Terms of Some Variables

Ahmet UYAR¹Burcu KARAFİL²Gizem GÜNDOĞAN İNCE³

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Abstract

The aim of this study is to determine university students' levels of acceptance of online learning (AOL) and to examine whether these levels differ significantly based on variables such as gender, type of institution, internet access at home, having a personal computer, grade, field of study, grade point average (GPA), and parental education levels. The study was conducted using the survey model, one of the quantitative research designs, and the sample consisted of 522 university students. Data were collected using the "Online Learning Acceptance Scale" and analyzed through descriptive statistics such as arithmetic mean, standard deviation, minimum, and maximum values, as well as inferential statistics including independent samples t-test and one-way ANOVA. According to the findings, students' overall levels of AOL were found to be high. Male students exhibited significantly higher acceptance levels compared to female students. Students who had internet access and a personal computer at home reported significantly higher acceptance levels than those who did not. In terms of grade level, third-year students demonstrated significantly greater acceptance than first-year students. When comparing different academic programs, students enrolled in social sciences and technical fields had higher acceptance levels than those in health sciences. Students whose mothers were university graduates reported significantly higher acceptance levels than those whose mothers were illiterate or had completed only primary, middle, or high school. Similarly, students whose fathers had completed high school or university education had higher acceptance levels than those whose fathers were illiterate. On the other hand, no significant differences were found in students' acceptance levels based on type of institution attended or overall GPA.

Keywords: University students, Acceptance of online learning, Distance learning

INTRODUCTION

The global rise in online learning has been largely influenced by the ongoing transformation of instructional methods in higher education institutions (HEIs), driven by rapid developments in digital technology (Maatuk et al., 2022). This transformation, which has significantly impacted students' communication styles, access to information, and interactions with their peers, was further intensified by the COVID-19 pandemic in 2020 (Parida et al., 2023; Alami & El Idrissi, 2022). Moreover, this shift has improved the ability of HEIs to respond flexibly to unexpected economic and environmental challenges (Raaper, 2021).

Online education, increasingly recognized as a viable and effective alternative to traditional face-to-face instruction, holds great potential for supporting students in developing essential 21st-century skills. Technologically enriched platforms provide flexible and inclusive learning opportunities, particularly for individuals facing geographical, temporal, or personal barriers to higher education (Chakraborty et al., 2021). These platforms enable self-paced learning and offer diverse multimedia tools that accommodate various learning styles (Dhawan, 2020). Additionally, students can communicate with instructors as needed, which promotes learner autonomy and

¹Asst. Prof. Dr., Hatay Mustafa Kemal University, Antakya Vocational School, Computer Technologies, Hatay, Türkiye; e-mail: ahmet_uyar23@hotmail.com; ORCID: 0000-0001-9694-8629

²Lect., Yalova University, School of Foreign Languages, Yalova, Türkiye; e-mail: burcu.karafil@yalova.edu.tr; ORCID: 0000-0001-7297-7871

³PhD Student, İnönü University, Faculty of Education, Malatya, Türkiye; e-mail: gizemgundogan46@gmail.com; ORCID: 0009-0007-1209-3987

supports personalized engagement with the course content (Culduz, 2024). The ability to revisit lessons enhances comprehension and retention, while easy access to digital tools from home increases convenience and participation, especially for students balancing academic responsibilities with work or family commitments (Mizrak, 2023). Beyond these practical benefits, online learning environments also play a critical role in developing 21st-century competencies such as digital literacy, collaboration, and critical thinking—skills considered fundamental in contemporary education (Demir Öztürk & Eren, 2020). Accordingly, fostering meaningful student interaction and advancing these competencies should be central objectives in distance education practices (Şen Akbulut, 2020). Therefore, online education can be regarded not only as a means of expanding access to learning, but also as a strategic environment that equips students with the essential competencies required for success in the digital age.

Although online learning offers numerous advantages, it can also evoke various adverse emotional responses in some students, including feelings of isolation, apprehension, stress, or discouragement (Bakhtiar et al., 2018). Factors such as reduced interaction, inadequate digital skills, and interruptions during lessons may hinder the overall success of online learning environments (Hollister et al., 2022). Students might feel uneasy due to the lack of face-to-face interaction with instructors and classmates, worry about underachieving academically, fear being judged negatively (Hilliard et al., 2020), or experience anxiety stemming from the need to navigate unfamiliar digital learning tools (Estriegana et al., 2021). These challenges underline the continuing relevance of conventional face-to-face teaching methods within higher education. Ng et al. (2023) and Darley (2021) emphasize the need for educators to strengthen their digital pedagogical competencies, foster active participation in virtual settings, and efficiently organize online instructional content to ensure effective learning.

The quality and effectiveness of online learning are shaped by several interrelated factors, among which students' acceptance of the system plays a pivotal role. Previous studies have emphasized the importance of students' AOL (Aguilera Hermida, 2020; Pal & Vanijja, 2020). If students refuse to use it or use it only because they have to, the effectiveness of e-learning becomes uncertain (Akbari et al., 2023). In this context, students' AOL emerges as a critical factor in determining the overall effectiveness and sustainability of digital learning environments.

Existing literature offers valuable insights into the variables that influence students' AOL, particularly among those enrolled in disciplines such as business, education, and management (Alami & El Idrissi, 2022; Darley, 2021; Mariam et al., 2023). Studies suggest that acceptance levels vary across learner groups, shaped by their prior experiences, technological proficiency, and expectations (Briggs et al., 2023; Panigrahi et al., 2018). For instance, López et al. (2023) found that students who regularly use digital tools to search for information tend to develop stronger online learning skills, resulting in greater satisfaction and improved academic outcomes. Moreover, individuals' AOL is influenced by personal expectations and varying levels of digital competence (Panigrahi et al., 2018).

In this context, students' AOL can be understood as their level of comfort, willingness, and perceived ease in engaging with digital educational platforms. Although the concept is not new, it serves as a strong indicator of the usability and perceived effectiveness of online learning systems (Casaló et al., 2008). This construct is often evaluated through key dimensions such as overall satisfaction (Lee, 2010), intention to continue using the platform (Beldad & Hegner, 2018), likelihood of recommending it to others (Zhang et al., 2019), perceived convenience (Chang et al., 2012), and intrinsic motivation to participate (Venkatesh, 2000). Therefore, identifying and addressing the factors that shape student acceptance is essential for enhancing engagement and ensuring successful learning experiences in online education.

Despite the growing body of research on students' AOL, there remains a need for further exploration across diverse institutional and socio-demographic contexts, particularly in settings affected by extraordinary circumstances. One such context is Hatay Mustafa Kemal University, where the continuation of online instruction after the 2023 earthquake has created a unique post-

disaster learning environment. This situation provides an opportunity to investigate how students' AOL is shaped not only by technological access and personal factors, but also by broader structural and environmental disruptions. In this regard, the present study seeks to fill this gap by addressing the following research questions:

- 1) *What is the AOL level of university students?*
- 2) *Does AOL level of university students differ by gender, type of institution attended, internet access, having a personal computer, grade level, field of study, GPA, and parental education variables?*

Purpose of the Research

Building upon the theoretical insights that highlight the impact of digital competence, prior experience, and motivational factors on students' engagement with online platforms, the present study aims to provide an empirical examination of how various demographic and educational variables relate to students' acceptance levels. Through a quantitative survey design, this study offers an understanding of how access to digital resources and socio-demographic background can influence students' readiness and comfort in engaging with online learning. By identifying these differences, the study contributes to the development of more inclusive and effective online learning environments that are responsive to diverse learner profiles.

METHOD

This study employed quantitative research design using the survey model. Survey research is commonly used to describe participants' opinions, current conditions, or events as they exist, without manipulation or intervention (Tuncer, 2020). In this context, the study aimed to reveal students' levels of AOL based on their existing conditions, without applying any experimental treatment.

Population and Sample

The population of the study consisted of approximately 8,000 students enrolled in online education at Hatay Mustafa Kemal University. The sample comprised 522 students who voluntarily agreed to participate in the study. Hatay Mustafa Kemal University was specifically chosen as the research setting because many faculties and vocational schools within the institution continue to deliver instruction online following the earthquake.

A convenience sampling method was employed to select participants, allowing the researcher to save time and easily access suitable respondents (Dawson & Trapp, 2001; Kılıç, 2013). Among the 522 participants, 65.9% (n = 344) were female, and 34.1% (n = 178) were male. Regarding educational institution type, 70.9% (n = 370) of the students were enrolled in vocational schools, while 29.1% (n = 152) were studying in faculties. In terms of grade level, 39.8% (n = 208) were first-year students, 47.1% (n = 246) were second-year, 10.7% (n = 56) were third-year, and 2.3% (n = 12) were fourth-year students. With respect to field of study, 44.4% (n = 232) of students were enrolled in social sciences, 34.5% (n = 180) in technical sciences, and 21.1% (n = 110) in health sciences. Regarding academic performance, 19.2% (n = 100) had a GPA below 2.50, 37.9% (n = 198) had a GPA between 2.51 and 3.00, 37.2% (n = 194) had a GPA between 3.01 and 3.50, and 5.7% (n = 30) had a GPA between 3.51 and 4.00. In terms of technological access, 69.7% (n = 364) of students reported having internet access at home, whereas 30.3% (n = 158) did not. Additionally, 67.0% (n = 350) stated that they had a personal computer. An examination of parents' educational backgrounds revealed that 47.5% (n = 248) of mothers and 41.4% (n = 216) of fathers had completed primary school education, which was the most common education level among both groups.

Data Collection Tool

In this study, the *Online Learning Acceptance Scale*, developed by Akyürek and Battal (2024), was used to determine students' levels of AOL. This scale was chosen due to its alignment with the study's objectives and the lack of any other valid and reliable Turkish-language scale specifically

measuring online learning acceptance. The scale is a 7-point Likert-type instrument, consisting of five sub-dimensions as *"Students' technological proficiency"*, *"The effectiveness and competence of instructors in delivering online education"*, *"Students' digital literacy levels"*, *"The technical support provided for online activities"*, and *"Overall acceptance of online learning activities"*. The response range as *"Strongly Disagree"* (1), *"Disagree"* (2), *"Somewhat Disagree"* (3), *"Neither Agree Nor Disagree"* (4), *"Somewhat Agree"* (5), *"Agree"* (6), *"Strongly Agree"* (7). The Cronbach's alpha internal consistency coefficient for the overall scale was reported as .92 by the researchers (Akyürek & Battal, 2024). The Cronbach's alpha values related to the subdimensions were calculated as .85, .81, .83, .87, and .94, respectively, indicating high internal consistency. Furthermore, construct validity of the scale was supported through confirmatory factor analysis (CFA) conducted in the original study. The five-factor structure of the AOLS was confirmed with acceptable model fit indices ($\chi^2/df = 2.77$, RMSEA = .06, NFI = .93, and CFI = .95), demonstrating a good fit of the measurement model. In the current study, the overall internal consistency coefficient was found to be .93, and the subdimension coefficients were .82, .84, .84, .85, and .94, respectively. These findings indicate that the scale has a high level of reliability.

Data Collection Process

The data for the study were collected in March 2025 using an online questionnaire created via Google Forms. The survey link was sent to students through social media platforms. Participation was voluntary, and students who agreed to take part completed the form online. The data collection process lasted for approximately one month.

Data Analysis

To determine students' AOL, descriptive statistics such as arithmetic mean, standard deviation, minimum, and maximum values were utilized in the analysis. The instrument employed in this study was a 7-point Likert-type scale, with response options ranging from 1 to 7. In order to interpret the students' acceptance levels meaningfully, score ranges corresponding to each category were calculated using the formula: (Maximum score – Minimum score) / 5, which resulted in a range of 1.20. Based on this, perception levels were categorized as follows: 1.00–2.19: Very Low; 2.20–3.39: Low; 3.40–4.59: Moderate; 4.60–5.79: High; 5.80–7.00: Very High. To determine the appropriate data analysis methods, normality tests were first conducted. Skewness and kurtosis values were examined, and Shapiro-Wilk and Kolmogorov-Smirnov tests were used to assess whether the data followed a normal distribution. The results indicated skewness of –0.286 and kurtosis of –0.081, both of which fall within the acceptable range of –1.5 to +1.5. In addition, the p-values from both normality tests were greater than .05 ($p > .05$), confirming that the data were normally distributed. Based on these findings, parametric statistical tests were deemed appropriate for further analysis. To examine whether students' acceptance levels varied significantly based on variables such as gender, type of institution (faculty vs. vocational school), internet access at home, and having computer, an independent samples t-test was conducted. For variables of year of study, field of study, GPA and parents' education level, a one-way analysis of variance (ANOVA) was employed. When the ANOVA results indicated statistically significant differences, post hoc tests were used to identify the source of group differences. To select the appropriate post hoc procedure, Levene's test was used to assess homogeneity of variances across groups. As the Levene's test results confirmed variance homogeneity for all variables, the Scheffé test was applied for pairwise comparisons.

FINDINGS

This section presents the results of the analysis conducted according to the research problems. Student AOL levels are presented in Table 1.

Table 1. Descriptive Data of Online Learning Acceptance Scale

Variables	N	Min	Max	$\bar{X}$	Ss	Skewness	Kurtosis	Level
AOL	522	1.45	7.00	4.74	1.08	-.286	-.081	High

When the mean score ($\bar{X}=4.74$) obtained from the scale in Table 1 is examined, it can be said that students' AOL are at high level. Table 2 presents whether students' AOL levels differ by gender variable.

Tablo 2. AOL Level by Gender

Variable	Gender	N	$\bar{X}$	S	sd	t	p
AOL	Female	344	4.59	1.04	520	-4.405	.000*
	Male	178	5.03	1.09			

* $p < .05$

As shown in Table 2, university students' AOL levels differ significantly based on gender ($t_{(520)} = -4.405$, $p < .05$). According to the mean scores, male students ($\bar{X}=5.03$) reported higher levels of AOL compared to female students ($\bar{X}=4.59$). The differences in students' AOL levels based on the type of institution attended are presented in Table 3.

Tablo 3. AOL Level by Type of Institution

Variable	Type of Inst.	N	$\bar{X}$	S	sd	t	p
AOL	Faculty	152	4.85	1.02	520	1.520	.520
	VHS	370	4.69	1.10			

VHS= Vocational High School

As shown in Table 3, there were no statistically significant difference in university students' AOL levels based on the type of institution attended ($t_{(520)} = 1.520$, $p > .05$). Although students enrolled in faculties reported slightly higher acceptance levels ($\bar{X}=4.86$) compared to those studying at vocational schools ($\bar{X}=4.70$), this difference was not statistically significant. The difference in students' AOL levels based on internet access at home is presented in Table 4.

Tablo 4. AOL Level by Internet Access at Home

Variable	Internet Access	N	$\bar{X}$	S	sd	t	p
AOL	Yes	364	4.89	1.07	520	4.721	.000*
	No	158	4.41	1.02			

* $p < .05$

A statistically significant difference was found in university students' AOL levels based on whether they have internet access at home ($t_{(520)} = 4.721$, $p < .05$). Students with internet access at home reported significantly higher acceptance levels ($\bar{X}= 4.89$) compared to those without internet access at home ($\bar{X}= 4.41$). The difference in students' AOL levels based on having a personal computer is presented in Table 5.

Tablo 5. AOL Level by Having a Personal Computer

Variable	Personal Computer	N	$\bar{X}$	S	sd	t	p
AOL	Yes	350	4.91	1.09	520	5.304	.000*
	No	172	4.39	.98			

* $p < .05$

As shown in Table 5, there is a statistically significant difference in university students' AOL level based on whether they have a personal computer ($t_{(520)} = 5.304$, $p < .05$). According to the means, students who have a personal computer reported significantly higher levels of acceptance ($\bar{X}= 4.92$) compared to those who do not have a personal computer ($\bar{X}= 4.40$). The difference in students' AOL levels based on grade level is presented in Table 6.

Tablo 6. AOL Level by Grade

Variable	Grade	N	$\bar{X}$	S	S.V.	S.S.	sd	M.S.	F	p	Dif.
AOL	1-1 st	208	4.62	1.06	Between G.	13.034	3	4.345	3.763	.011*	3>1
	2-2 nd	246	4.74	1.06	Within G.	598.061	518	1.155			
	3-3 rd	56	5.13	1.14	Total	611.095	521				
	4-4 th	12	5.06	1.03							

*p<.05; Dif.: Difference

According to the findings in Table 6, students' AOL levels differ significantly by grade level [$F_{(3,518)} = 3.763, p < .05$]. Results of the Scheffé test indicate that students in the third year reported higher AOL compared to first-year students. The difference in students' AOL levels based on field of study is presented in Table 7.

Tablo 7. AOL Level by Field of Study

Variable	Field of Study	N	$\bar{X}$	S	S.V.	S.S.	sd	M.S.	F	p	Dif.
AOL	1-Social	232	4.81	1.06	Between G.	14.985	2	7.493	6.523	.002*	1>3 2>3
	2-Technical	180	4.85	1.00	Within G.	596.110	519	1.149			
	3-Health	110	4.41	1.18	Total	611.095	521				

*p<.05; Dif.: Difference

According to the findings in Table 7, students' AOL levels differ significantly by field of study [$F_{(2,519)} = 6.523, p < .05$]. Results from the Scheffé test show that students enrolled in social and technical sciences programs reported higher levels of acceptance compared to those studying in health sciences programs. The difference in students' AOL levels based on their GPA is presented in Table 8.

Tablo 8. AOL Level by GPA

Variable	GPA	N	$\bar{X}$	S	S.V.	S.S.	sd	M.S.	F	p	Dif.
AOL	Below 2.50	100	4.70	1.30	Between G.	2.374	3	0.791	.673	.569	No
	2.51-3.00	198	4.71	1.00	Within G.	608.721	518	1.175			
	3.01-3.50	194	4.76	1.04	Total	611.095	521				
	3.51-4.00	30	5.00	0.97							

Dif.: Difference

According to the findings in Table 8, students' AOL levels did not significantly differ based on their overall GPA [$F_{(3,518)} = .673, p > .05$]. The difference in students' AOL levels based on mother's educational background is presented in Table 9.

Tablo 9. AOL Level by Mother's Educational Background

Variable	Education	N	$\bar{X}$	S	S.V.	S.S.	sd	M.S.	F	p	Dif.
AOL	1-IL	66	4.68	1.08	Between G.	16.472	4	4.118	3.580	.007	5>1 5>2 5>4
	2-PS	248	4.68	1.08	Within G.	594.623	517	1.150			
	3-SS	94	4.80	1.03	Total	611.095	521				
	4-HS.	80	4.62	1.02							
	5-U	34	5.38	1.18							

Note: IL: Illiterate; PS: Primary School; SS: Secondary School; HS: High School; U: University; Dif.: Difference

According to the findings in Table 9, students' AOL levels differed significantly based on the mother's educational background [$F_{(4,517)} = 3.580, p < .05$]. The Scheffé test results revealed that students whose mothers held a university degree had significantly higher levels of AOL compared to those whose mothers were illiterate or had completed only primary, middle, or high school education. The variation in students' AOL levels based on the father's educational background is presented in Table 10.

Tablo 10. AOL Level by Father's Educational Background

Variable	Education	n	$\bar{X}$	S	S.V.	S.S.	sd	M.S.	F	p	Dif.
AOL	1-IL	12	4.25	1.17	Between G.	12.644	4	3.161	2.731	.029	5>1
	2-PS	216	4.63	1.00	Within G.	598.451	517	1.158			
	3-SS	96	4.70	1.12	Total	611.095	521				
	4-HS	134	4.97	1.08							
	5-U	64	4.80	1.19							

Note: IL: Illiterate; PS: Primary School; SS: Secondary School; HS: High School; U: University; Dif.: Difference

According to the findings in Table 10, students' AOL levels varied significantly based on their father's educational background [$F_{(4,517)} = 2.731, p < .05$]. The Scheffé test results indicated that students whose fathers held a university or high school degree had significantly higher levels of AOL compared to those whose fathers were illiterate.

RESULTS AND DISCUSSION

The research findings indicate that university students' AOL were at high level. This suggests that students have a positive attitude toward the learning processes offered in online environments. In contrast, Zabri et al. (2023) found that, AOL level among university students was moderate. Although this study directly examined AOL, the discussion also includes findings related to readiness, attitude, self-efficacy, and predisposition, due to the limited number of studies focusing specifically on this concept. Given that acceptance is a multidimensional construct encompassing perceptions of the system, psychological readiness, and motivation, incorporating these variables into the discussion is justified. Several studies (Baykan et al., 2023; Ünal et al., 2021; Uyar & Karakuyu, 2020; Baltacı et al., 2022) have similarly found high levels of readiness and self-efficacy among students and preservice teachers regarding online learning, which align with the present study's results. However, other studies (Tarım & Uyandıran, 2021; Gür-Erdoğan et al., 2017; Hacıömeroğlu & Elmalı, 2021) have reported moderate or low levels of readiness, attitude, or predisposition. These differing results suggest that various individual and systemic factors may influence students' AOL. One key factor emphasized in the literature is perceived usefulness. Research (Alenezi et al., 2011; Sun et al., 2008; Rezaei et al., 2008) highlights that perceived usefulness and ease of use significantly impact students' acceptance and satisfaction with online learning systems. In the present study, students' high acceptance levels may be attributed to their perception of online learning as useful and accessible. Furthermore, improved technological infrastructure, increased user experience, and broader access to digital tools during the study period likely contributed to these positive perceptions. The quality of content and opportunities for knowledge sharing, as noted by Salloum et al. (2019), may also have enhanced student engagement and acceptance. Overall, the findings suggest that high levels of acceptance among students are closely related to factors such as perceived usefulness, ease of use, content quality, and opportunities for interaction.

According to the research findings, male students demonstrated higher level AOL compared to female students, suggesting that gender may play a significant role in shaping students' AOL environments. This result aligns with previous studies (Şener et al., 2022; Tarım & Uyandıran, 2021; Kılıç, 2022; Fidan, 2016), which similarly reported that male students or pre-service teachers tend to exhibit more positive attitudes toward online learning. Supporting this finding, Baykan et al. (2023) found that male students scored higher in computer and internet self-efficacy, a factor widely recognized as critical to online learning acceptance. Likewise, other studies (Kabaran et al., 2016; Pajares & Johnson, 1996; Zhao et al., 2010; Yıldız & Seferoğlu, 2020) have shown that males tend to possess higher levels of digital literacy and self-efficacy. Conversely, several studies contradict these results, suggesting that gender does not significantly influence acceptance, attitude, or readiness for online learning (Demir, 2013; Baltacı et al., 2022; Ünal et al., 2021; Uyar & Karakuyu, 2020; Gömleksiz & Pullu, 2020; Demir Öztürk & Eren, 2021). These discrepancies may stem from differences in contextual variables, participant characteristics, measurement instruments, or cultural factors across studies.

University students' AOL level did not significantly differ based on the type of institution (faculty or vocational school) in which they were enrolled. This suggests that AOL may be more strongly influenced by individual factors—such as personal attitudes, experiences, and digital competencies—rather than the structural characteristics of the academic unit. This result is consistent with previous studies. For instance, Demir (2013) reported no significant difference in pre-service teachers' acceptance of e-learning tools based on their department of study. Similarly, Adnan and Boz-Yaman (2017) found that engineering students' e-learning readiness did not vary significantly by academic department. In line with these findings, Olcay et al. (2018) also reported no significant differences in e-learning readiness among associate degree students based on program type. Ünal et al. (2021) found no significant difference in online learning readiness between associate and undergraduate students, although graduate-level students demonstrated higher readiness levels, suggesting that online learning acceptance may increase with educational level. Overall, the present study's findings align with the literature, indicating that the type of institution (faculty or vocational school) is not a major determinant of online learning acceptance. This may be attributed to the relatively uniform access to online learning environments, infrastructure, and digital services across departments within higher education institutions.

According to the research findings, university students with internet access at home demonstrated significantly higher levels of AOL compared to those without such access. This finding indicates that technical access condition—an essential component of online learning—is a determining factor in individuals' acceptance of this mode of education. A review of the literature shows that this finding aligns with the results of many studies. For instance, Şener et al. (2022) found that students with home internet access had higher AOL than those without. Similarly, Demir (2013) noted that pre-service teachers with internet access exhibited greater acceptance of e-learning tools. The study conducted by Ünal et al. (2021) also reported that students with uninterrupted internet access at home had higher readiness for online learning compared to those with limited or no access. Likewise, studies by Uyar and Karakuyu (2020), Gömleksiz and Pullu (2020), and Demir Öztürk and Eren (2021) showed that the frequency, quality, and consistency of internet access positively impact both readiness for and AOL. The central point shared across these studies is that online learning is not solely a pedagogical process but also one that requires technical competence, with internet access being an indispensable component. The accessibility and sustainability of the system are key determinants in students' AOL. However, in contrast to these findings, the study by Tarım and Uyandırın (2021) reported that internet access did not lead to a significant difference in students' attitudes toward e-learning. This discrepancy may stem from differences in the focus of the measurement tool (i.e., attitude-based), the criteria used to define levels of internet access, or the characteristics of the participant group. Additionally, beyond mere access, how students utilize these resources, interact with content, and their level of digital literacy can also influence attitudes. In conclusion, the findings of the current study reveal that internet access is a critical factor in AOL, and in this respect, it is largely consistent with the existing literature.

The study found that university students who have a personal computer have significantly higher AOL levels compared to those who do not own a computer. This finding indicates that the technological equipment used in the online learning process is a determining factor in students' acceptance of this mode of education. Considering the use of interactive content, synchronous classes, and online assessment tools, access to a computer enables more active participation in online learning environments. There are various studies in the literature that support this finding. For example, Şener et al. (2022) reported that students who own a computer have higher levels of AOL than those who do not. Similarly, Kılıç (2022) found that pre-service teachers with computers showed more positive attitudes toward e-learning. In a study conducted by Demir (2013), similar results were obtained, revealing that having a computer positively affects the acceptance of e-learning tools. Uyar and Karakuyu (2020) also stated that students who own a computer have significantly higher readiness levels for e-learning compared to those who do not. A similar conclusion was reached in the study by Gömleksiz and Pullu (2020), which found that students using laptops had higher readiness levels for online learning than those using mobile

phones. These findings demonstrate that online learning is directly related to technological infrastructure and that the hardware and functional advantages of desktop or laptop computers support more effective participation in the learning process. On the other hand, Bahadır's (2020) study revealed that having a computer did not significantly affect e-learning readiness levels, which contradicts the findings of the present study. Such discrepancies may arise due to differences in sample characteristics, the type of measurement instruments used, the technical features of the e-learning system, or the participants' levels of digital literacy. Overall, the findings of this study are largely consistent with the existing literature emphasizing that having a computer can be considered a determining factor not only in terms of technical access but also in terms of students' ability to navigate digital environments with confidence, complete tasks on time, and engage more effectively with digital content.

According to the research findings, third-year university students demonstrated significantly higher levels of AOL compared to first-year students. This suggests that acceptance may increase as students progress through their academic years. A possible explanation for this trend could be the development of digital literacy skills and the more frequent use of online platforms among upper-year students. Several studies support this finding. For example, Kılıç (2022) reported that pre-service teachers in their second, third, and fourth years exhibited more positive attitudes toward e-learning than first-year students. Similarly, Gömleksiz and Pullu (2020) found that second-year students had higher readiness levels for online learning compared to their first-year peers. These findings suggest that familiarity with university systems and increased exposure to digital environments may enhance students' acceptance. However, the literature also presents mixed results. Baltacı et al. (2022) observed that first-year students reported higher levels of online learning self-efficacy than third-year students, while fourth-year students outperformed third-year students. Likewise, Şener et al. (2022) found that fourth-year students had lower overall acceptance levels compared to students in earlier years, possibly due to reduced motivation or engagement as graduation approaches. Other studies, such as those by Uyar and Karakuyu (2020) and Baykan et al. (2023), found no significant differences in online learning readiness across grade levels. These inconsistencies may stem from equal exposure to online learning environments across grade levels or institutional factors that standardize digital learning experiences. In conclusion, while this study suggests that mid-level students may demonstrate greater AOL, contradictory findings in the literature indicate that grade level alone may not be a definitive predictor. Individual student characteristics, instructional practices, course content, and the quality of technological infrastructure likely interact to shape students' AOL.

The research findings indicate that students studying in the fields of social sciences and technical sciences have higher levels of AOL compared to students in the field of health sciences. This result suggests that the type of academic program students are enrolled in can influence their perceptions and AOL. Specifically, programs in social and technical fields may be better suited to the delivery of online content and access to digital resources, which could contribute to this difference. There are studies in the literature that support this finding. For example, Uyar and Karakuyu (2020) found that students in technical programs had higher levels of readiness for e-learning compared to those in social science programs. Zabri et al. (2023) found that students from technical-based programmes exhibit a higher level of AOL. These findings align with the studies by Wan et al. (2008) and López et al. (2023), which suggest that more frequent use of information-seeking ICT enhances individuals' online competencies, thereby leading to improved learning outcomes and greater satisfaction. This may be explained by the fact that students in technical fields are more integrated with technology and tend to use digital tools more effectively. Similarly, Fidan (2016) reported that students in technical programs exhibited more positive attitudes toward e-learning than their peers in social programs. These studies show that the level of acceptance and attitude toward online learning is closely related to the nature of academic discipline. These studies indicate that AOL and attitudes toward online learning are often influenced by the nature of academic discipline. However, the present study's finding adds a new perspective to the literature, which has predominantly focused on comparisons between technical and social disciplines. The relatively low acceptance levels among health science students may be

due to the practical and lab-based nature of their education, which online environments often struggle to fully support. In this context, the findings suggest that students in health sciences may perceive online learning environments as more limited or insufficient, while students in social and technical disciplines appear to adapt more effectively to such environments.

The findings indicated that students' AOL levels did not significantly differ based on their GPA. This suggests that academic achievement alone is not a determining factor in shaping students' AOL environments. In other words, both high-achieving and lower-achieving students exhibit similar attitudes toward online learning. Several factors may explain this result. First, individual preferences, access to technology, digital literacy, and prior experience with online platforms may play a more critical role in shaping acceptance than academic performance. Students' perceptions of the functionality and supportiveness of digital platforms, rather than their academic success, appear to influence their attitudes more strongly. Second, with the widespread adoption of online learning post-pandemic, the modality has become more universal and compulsory, possibly diminishing achievement-based differences. Third, the concept of acceptance is inherently multidimensional, encompassing cognitive, affective, and motivational components. As such, it is likely influenced by diverse variables such as learning styles, technological access, instructional quality, and prior digital learning experiences.

The study also revealed that students whose mothers were university graduates had significantly higher acceptance levels than those whose mothers were illiterate or had only completed primary, secondary, or high school. Similarly, students whose fathers were high school or university graduates also reported higher acceptance levels compared to those whose fathers were illiterate. These findings suggest that parental education, particularly maternal education, may positively influence students' attitudes toward online learning. Consistent with this, Uyar and Karakuyu (2020) found that students whose mothers were university graduates had higher levels of e-learning readiness. Given the central role mothers often play in the educational development of children, maternal educational background may significantly shape students' learning attitudes. However, findings related to paternal education show variation across studies. While Uyar and Karakuyu (2020) found no significant relationship between fathers' education levels and students' e-learning readiness, the present study observed a significant difference. This discrepancy may be attributed to differences in measurement tools, participant characteristics, or sample diversity. Additionally, the construct of "acceptance" may encompass broader dimensions than "readiness," making it more sensitive to socio-demographic variables such as parental education. In conclusion, the findings of this study indicate that maternal education level has a strong impact on students' AOL, whereas the findings related to paternal education show partial inconsistency with previous literature. This may suggest that the roles of parents in the learning process differ and that mothers may have a more direct and interactive influence on their children's educational engagement.

In this study, university students' AOL levels were examined in relation to various demographic and technological variables. The findings revealed that students generally have a high level of AOL. This indicates that students approach learning processes offered in digital environments positively and are willing to engage with online education practices. The results showed that male students demonstrated a higher level of acceptance compared to female students, while the type of institution (faculty or vocational school) did not lead to a significant difference in acceptance levels. Furthermore, students' AOL level significantly differed based on whether they had internet and computer access at home. Having technological resources emerged as a factor supporting a positive attitude toward online learning. The higher acceptance levels among upper-year students may be attributed to increased awareness gained through greater experience with online learning. Additionally, students studying in the fields of social and technical sciences had higher AOL compared to those in health sciences, which may be related to interdisciplinary approaches and digital literacy skills. Moreover, a significant relationship was found between students' acceptance levels and their parents'—particularly their mothers'—educational background. Based on the results obtained, the following recommendations are presented.

- In order to conduct online learning processes more effectively and inclusively at universities, students' access to technological infrastructure should be taken into consideration. Supportive policies should be developed, and equal opportunities should be provided, especially for students with limited internet and computer access.
- When formulating educational policies, strategies that encourage parental involvement can be developed since parental education level influences students' AOL
- When designing learning materials, students' technological competence levels, interdisciplinary differences, and grade levels should be taken into account to create customized content.
- For fields such as health sciences, where online learning is less accepted, interactive and practice-based content should be increased to foster more positive attitudes toward online learning.
- In addition to the variables addressed in this study, further research examining the relationship between students' AOL and factors such as learning styles, digital literacy levels, and motivation would contribute to the literature.
- Comparative studies across different universities, geographic regions, and disciplines would allow for more generalizable findings.

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Ortaokul Öğrencilerinin Proje Yarışması Deneyimleri: Teknofest Örneği¹

Middle School Students' Project Competition Experiences: The Case of Teknofest

Ragıp ÇAVUŞ²

Çavuş, R. (2025). Ortaokul Öğrencilerinin Proje Yarışması Deneyimleri: Teknofest Örneği. *Disiplinlerarası Eğitim Araştırmaları Dergisi*, 9(21),487-508. <https://doi.org/10.57135/jier.1669387>

Öz

Bilimsel ve teknolojik yetkinlikler, 21. yüzyıl becerilerinin geliştirilmesinde ve sürdürülebilir kalkınmada önemli bir role sahiptir. Öğrencilerin bilimsel ve teknolojik yetkinliklerinin geliştirilmesi, okuldaki etkinliklerin yanı sıra okul dışı zamanlarda gerçekleştirilen etkinliklere de bağlıdır. Bu etkinliklerden birisi de bilimsel içerikli proje yarışmalarıdır. Bu doğrultuda araştırmada, Teknofest Havacılık, Uzay ve Teknoloji Festivali'ne katılan ortaokul öğrencilerinin proje yarışması deneyimlerinin kapsamlı bir şekilde incelenmesi amaçlanmaktadır. Nitel araştırma yöntemlerinden fenomenolojik yaklaşım temelinde yürütülen bu araştırmanın çalışma grubunda, Marmara Bölgesi'ndeki bir büyükşehirin ilçe merkezinde bulunan bir ortaokuldaki 13 öğrenci yer almaktadır. Araştırmanın verileri yarı yapılandırılmış odak grup görüşmeleriyle elde edilmiş olup, içerik analizi ile değerlendirilmiştir. Bulgular, öğrencilerin proje yarışmasına katılım motivasyonlarında insanlığa faydalı olma, yenilikçi ürün geliştirme ve kendilerini deneme isteğinin ön plana çıktığını göstermektedir. Öğrenciler, proje geliştirme aşamasında üretim, tasarım ve rapor yazımı gibi çeşitli süreçlerde güçlüklerle karşılaşsalar da, bu güçlükleri öğretmenlerinden, ailelerinden ve akranlarından aldıkları destekle aştıklarını belirtmişlerdir. Araştırma sonuçları bilimsel içerikli proje yarışmalarına dair sürecin öğrencilerin bilişsel, duyuşsal ve sosyal becerilerini olumlu yönde etkilediğini, problem çözme, yaratıcılık ve iş birliği yetkinliklerini geliştirmelerine ve gelecekteki bilimsel çalışmalara katılımlarına katkı sağladığını ortaya koymaktadır. Bu sonuçlar ışığında, öğrencilerin katılım motivasyonlarını sürdürmeleri ve karşılaşılan güçlüklerin en aza indirilmesi adına, proje yarışmalarının kapsamının genişletilmesi, teknik ve finansal destek mekanizmalarının güçlendirilmesi ve gerek yarışma gerekse proje geliştirme süreciyle ilgili eğitimlerin yaygınlaştırılması önerilmektedir.

Anahtar Kelimeler: Ortaokul öğrencileri, öğrenci deneyimleri, proje yarışmaları, Teknofest

Abstract

Scientific and technological competencies play a crucial role in developing 21st-century skills and fostering sustainable development. The enhancement of students' scientific and technological competencies depends not only on in-school activities but also on extracurricular activities, such as science project competitions. In this context, this study aims to comprehensively examine the project competition experiences of middle school students who participated in the Teknofest Aerospace and Technology Festival. The study, conducted using a phenomenological approach within qualitative research, included 13 students from a middle school in a metropolitan district of the Marmara Region. Data were collected through semi-structured focus group interviews and analyzed using content analysis. The findings indicate that students' motivations for participating in the competition were primarily driven by a desire to contribute to humanity, develop innovative products, and challenge themselves. Although students encountered difficulties during various stages of project development - such as production, design, and report writing- they reported overcoming these challenges with the support of their teachers, families, and peers. The results reveal that engaging in science project

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² Dr., Millî Eğitim Bakanlığı, Kocaeli-Türkiye, ragipcavus@hotmail.com, orcid.org/0000-0003-3449-5729

competitions positively impacts students' cognitive, affective, and social skills. Participation contributes to the development of problem-solving, creativity, and collaboration competencies, while also fostering future involvement in scientific endeavors. In light of these findings, it is recommended that the scope of project competitions be expanded, technical and financial support mechanisms be strengthened, and training on both competition processes and project development be made more widely available to help students sustain their motivation and minimize the challenges they face.

Keywords: Middle school students, student experiences, project competitions, Teknofest

GİRİŞ

Küresel rekabetin giderek arttığı 21. yüzyılda, bilim ve teknoloji, özellikle gelişmekte olan ülkeler için ekonomik büyüme, toplumsal refah ve sürdürülebilir kalkınmanın temel itici gücü haline gelmiştir. Bu bağlamda, genç nesillerin bilim ve teknolojiye olan ilgisini artırmak, onları erken yaşlardan itibaren yaratıcı düşünme ve problem çözme süreçlerine dahil etmek hayati bir önem taşımaktadır. Öğrencilerin sadece bilgi edinen değil, aynı zamanda edindikleri bilgiyi gerçek yaşam problemlerini çözmede etkin bir şekilde kullanan bireyler olmaları, modern eğitim reformlarının ve yenilikçi yaklaşımların temel hedeflerinden biridir (Hattie, 2015). Bu doğrultuda, öğrencilerin bilimsel okuryazarlık becerilerini, bilime yönelik olumlu tutumlarını ve kariyer ilgilerini geliştirmek kritik önem taşımaktadır. Fen bilimleri eğitimi, öğrencilerin bilimsel düşünme ve problem çözme yeteneklerini geliştiren dinamik bir süreç sunarak bu ihtiyaca yanıt vermektedir. Özellikle proje tabanlı öğrenme ve STEM (Fen, Teknoloji, Mühendislik ve Matematik) yaklaşımına dayalı uygulamalar bu dinamik süreci destekleyen yenilikçi eğitim yaklaşımları arasında öne çıkmaktadır.

Proje tabanlı öğrenme, öğrencilerin gerçek yaşam problemlerine etkin çözümler geliştirmelerini ve edindikleri bilgiyi pratik uygulamalarda verimli kullanmalarını sağlayan güçlü bir yaklaşımdır (Abdul Aziz, 2019; Bell, 2010; Choiriyah, Perdana Sriyansyah & Ponco Sumanto, 2024). Bu yaklaşım, öğrencilerin bilimsel bilgi edinme sürecine aktif katılımlarını teşvik ederek öğrenmeyi daha kalıcı hale getirmede önemli bir rol oynamaktadır (Xu & Zhang, 2024). Proje tabanlı öğrenme uygulamalarının, öğrencilerin gerçek dünya bağlamlarıyla ilişki kurmalarına ve fen okuryazarlıklarının gelişimine katkı sağladığı da bilinmektedir (Hindun, Nurwidodo, Wahyuni & Fauziah, 2024; Rivet, 2003). Alanyazındaki çalışmalar, proje tabanlı öğrenmenin öğrencilere somut ürünler geliştirme fırsatı sunarak akademik başarılarını, bilime ve bilimsel çalışmalara yönelik tutum, ilgi ve motivasyonlarını artırdığını, bilimsel süreç becerilerini ve eleştirel düşünme gibi beceriler başta olmak üzere çeşitli 21. yüzyıl becerilerini geliştirdiğini göstermektedir (Bell, 2010; Blankenburg, Höffler, Peters & Parchmann, 2016; Borysova, Usenko & Ihnatenko, 2023; Can & Gerşil, 2021; Thomas, 2000; Uysal, 2021; Zhang & Ma, 2023).

Proje tabanlı öğrenme ile yakından ilişkili diğer bir güncel eğitim yaklaşımı ise STEM eğitimidir. STEM yaklaşımı, öğrencilerin fen, teknoloji, mühendislik ve matematik gibi farklı disiplinlerden edindikleri akademik bilgi ve becerileri gerçek dünya problemlerinin çözümüne uygulamalarını gerektirmekte olup 21. yüzyıl becerilerinin kazandırılmasında önemli bir araç olarak görülmektedir (Choiriyah vd., 2024). Gerek proje tabanlı öğrenmenin gerekse STEM eğitiminin olumlu yönlerinden hareketle, güncel öğrenme-öğretme süreçlerinde proje tabanlı STEM öğretimi entegre olarak sunulabilmektedir. Bu entegrasyon, öğrencilerin teorik bilgileri uygulamalı bir şekilde deneyimlemelerini sağlayarak akademik başarılarını artırmanın yanı sıra, STEM disiplinleri arasında bağlantı kurmalarını, bilimsel düşünme ve problem çözme becerilerini, STEM alanlarına yönelik ilgilerini ve kariyer yönelimlerini geliştirmelerine katkıda bulunmaktadır (Tanır & Türkmen, 2024).

Öğrencilerin proje tabanlı öğrenme ve STEM yaklaşımıyla tanışmalarını sağlayan önemli uygulamalardan biri de bilimsel içerikli proje yarışmalarıdır. Bu yarışmalar, hem proje tabanlı öğrenmenin hem de STEM yaklaşımının özelliklerini taşıyarak okul dışı zamanlarda gerçekleştirilen etkinliklerle öğrencilerin bilimsel düşünme becerilerinin yanı sıra sosyal ve

duygusal gelişimlerini destekleyen güçlü bir araç olarak öne çıkmaktadır. Toplumun bilimsel okuryazarlık düzeyine katkı sağlayan (Wu & Hsu, 2024) bu yarışmalar, öğrencilerin soyut bilimsel bilgileri somut ürünler ve çözümler haline getirme süreçlerini teşvik eden, öğrenme deneyimlerini zenginleştiren ve öğrenme-öğretme sürecine aktif katılımlarını sağlayan önemli bir platformdur. Ulusal ve uluslararası düzeyde düzenlenen bu etkinlikler, öğrencilere bireysel ve grup halinde çalışma fırsatları sunarak sosyal becerilerini geliştirmelerine de olanak tanır (Blumenfeld, Soloway, Marx, Krajcik, Guzdial & Palincsar, 1991). Özellikle STEM alanlarındaki proje yarışmaları, öğrencilerin bilimsel bilgiye dayalı ürünler geliştirerek yaratıcılıklarını ve problem çözme becerilerini güçlendirmeyi hedefler. Proje tabanlı öğrenmenin temel alındığı bu tür yarışmalar, öğrencilerin kalıcı öğrenmelerine, teorik bilgilerini gerçek hayattaki problemlere uygulamalarına, teknoloji ile bilimi entegre etmelerine, süreçte bir bilim insanı gibi çalışarak bilimsel süreç becerilerinin ve bilime yönelik olumlu duyuşsal özelliklerinin gelişmesine yardımcı olur (Amri, 2012; Barron & Darling-Hammond, 2008). Uluslararası düzeyde de gerçekleştirilen bu tür yarışmalar, ülkemizde genellikle TÜBİTAK tarafından ortaokul ve lise öğrencilerine yönelik araştırma proje yarışmaları ve T3 Vakfı tarafından Teknofest adı altında, ilkokuldan yetişkinlere kadar geniş bir katılımcı kitlesi için havacılık, uzay ve teknoloji festivali şeklinde düzenlenmektedir.

Teknofest Havacılık, Uzay ve Teknoloji Festivali, Türkiye'nin milli teknoloji hamlesi doğrultusunda gerçekleştirilen en büyük bilim ve teknoloji organizasyonlarından biridir. Genç nesilleri bilim ve teknoloji ile buluşturmayı amaçlayan bu etkinlik, yalnızca ileri düzey teknoloji projelerine değil, aynı zamanda ilkokul öğrencilerinin de katılım gösterebileceği çeşitli kategorilerde yarışmalar düzenleyerek erken yaşlardan itibaren öğrencilerin bilime olan ilgisini artırmayı hedeflemektedir (Teknofest, 2023). Teknofest yarışmaları, öğrencilere bilimsel düşünme süreçlerini keşfetme ve somut projeler geliştirme fırsatı sunmanın yanı sıra Türkiye'nin gelecekteki bilim ve teknoloji altyapısını güçlendirmeyi de amaçlamaktadır. Bu tür yarışmalar, öğrencilere bilimsel içerikli projelerini sunma, ulusal ve uluslararası düzeyde tanıtma fırsatı verirken, onların araştırma yapma, eleştirel düşünme, takım çalışması ve sunum becerilerini geliştirmelerine de katkı sağlamaktadır. Blankenburg ve diğerleri (2016), bilimsel yarışmalara katılımın öğrencilerin fen bilimleri ve matematik gibi alanlara olan ilgisini artırdığını ve bu etkinin özellikle yarışma sonrasında uzun süre devam ettiğini belirtmektedir. Bu bulgular, Teknofest gibi yarışmaların öğrencilerin bilimsel motivasyonlarını artırmada ne kadar etkili olabileceğini ortaya koymaktadır.

Meydan (2017), TÜBİTAK tarafından düzenlenen bilimsel içerikli proje yarışmalarına katılan öğrencilerin bilimsel bakış açısı kazanmalarında ve bilimsel düşünme, problem çözme ve özgüven sahibi olma gibi becerilerini geliştirmede bu yarışmaların önemli bir rol oynadığını vurgulamaktadır. Benzer şekilde, Andrieiev ve Andrieieva (2024), STEM projelerinin öğrencilerin girişimcilik ve sorumluluk alma gibi yaşam becerilerini geliştirmede etkili olduğunu belirtmiştir. Bu bağlamda, bilimsel içerikli proje yarışmaları, öğrencilere sadece akademik beceriler kazandırmakla kalmamakta, aynı zamanda onları bireysel ve toplumsal sorumlulukları olan, yenilikçi ve girişimci bireyler olarak yetiştiren zengin bir öğrenme ortamı sunmaktadır (Campbell, Wagner & Walberg, 2002; Sharaabi-Naor, Kesner & Shwartz, 2014).

Proje yarışmalarına katılım, öğrencilerin eğitim süreçlerinde önemli bir dönüm noktası oluşturmaktadır. Bu tür etkinliklerde yer alan öğrenciler, bilimsel süreçleri deneyimleyerek problem çözme, analitik düşünme, yaratıcı ürün geliştirme ve eleştirel bakış açısı kazanma gibi bilişsel beceriler edinirler (Krajcik & Blumenfeld, 2006). Bu kazanımlar, öğrencilerin sadece bilişsel gelişimlerine değil, aynı zamanda duyuşsal (özgüven, iş birliği, sorumluluk alma) ve psikomotor (uygulama becerileri) gelişimlerine de katkı sağlar. Öğrencilere disiplinlerarası düşünme yeteneği kazandırarak onların fen bilimleri ile teknoloji arasındaki ilişkiyi kavramalarını ve bu ilişkiden yeni ürünler veya çözümler üretmelerini sağlar (Erduran, 2014). Bu durum, bilimsel içerikli proje yarışmalarının öğrencilerin hem akademik hem de sosyal ve kişisel gelişimlerine önemli katkılar sunduğunu göstermektedir.

Bilimsel içerikli proje yarışmaları, öğrencilerin bilimsel meraklarını teşvik ederken, toplumsal farkındalığın gelişimine de katkıda bulunur. Öğrencilerin projeleri aracılığıyla karşılaştıkları problemleri çözme çabaları, onların sosyal sorumluluk bilinci kazanmalarına ve topluma katkı sağlayabilecek çözümler üretmelerine olanak tanır (Lave & Wenger, 1991). Özellikle mühendislik ve teknoloji odaklı projelerde, öğrenciler disiplinlerarası iş birliği yaparak toplumsal sorunlara çözüm üretmeye yönelik deneyim kazanmaktadırlar (High, Hammack, Watt, Thomas, Redmond, Jordan & Dockers, 2009; Čović, Šimon, Fürstner & Pataki, 2024). Bu yarışmalar, bireysel başarıların ötesinde, öğrencilerin insanlığa ve çevreye faydalı olma ve sorumluluk alma yetilerini de güçlendirmektedir (Brophy, 2006).

STEM yarışmalarına katılım, öğrencilere STEM alanlarındaki kaynaklara erişim, bilgi ve beceri kazanımı ile STEM'e yönelik olumlu tutum geliştirme gibi katkılar sunmaktadır (Jiang, Zhang & Lv, 2022). Bu bağlamda, STEM projelerinin ve yarışmalarının eğitim sistemine entegrasyonu, öğrencilerin disiplinlerarası düşünme becerilerini ve küresel rekabetçi yetkinliklerini artırmalarına yardımcı olur (Nikitina & Ishchenko, 2023). Bu durum, öğrencilerin STEM alanlarında derinlemesine bilgi ve beceriler kazanmalarının yanı sıra, kariyer planlamalarında da önemli etkiler oluşturabilir. Özellikle bu yarışmalar, öğrencilerin mesleki gelişimlerini sürdürülebilir bir şekilde destekleyerek kariyer yolculuklarında güçlü bir zemin hazırlayabilir. Zira alanyazın, öğrencilerin STEM içerikli proje yarışmalarına aktif katılımının STEM kariyer ilgileri üzerinde olumlu etkileri olduğunu vurgulamaktadır (High vd., 2009; Miller, Sonnert & Sadler, 2018). Bu tür yarışmalara katılan öğrenciler, sadece teknik becerilerini geliştirmekle kalmamakta, aynı zamanda hayat boyu öğrenme alışkanlıkları edinerek sürekli kendilerini yenileyen bireyler haline gelmektedir (Papert, 2020). Bu süreçte öğrenciler, danışman öğretmenleri ve ailelerinin desteğiyle daha etkili ve özgün projeler geliştirme fırsatı bularak karşılaştıkları zorlukları aşmak için iş birliği yapma ve çözüm üretme becerilerini geliştirirler (Mitchell, Foulger & Wetzel, 2009).

Bilimsel içerikli proje yarışmaları, öğrencilerin bilimsel meraklarını teşvik etmelerine, akademik başarılarını artırmalarına ve bilimsel düşünmeyi yaşam boyu sürdürülebilir bir beceri haline getirmelerine yardımcı olsa da, sürece katılan öğrenci ve öğretmenler uygulamalar sırasında çeşitli güçlüklerle karşılaşmaktadır. Alanyazında, proje geliştirme sürecinde öğretmen rehberliğinin öneminden bahsedilerek, sürecin başta planlama ve rehberlik açısından iyileştirilmesi ve öğretmen rehberliği eğitimlerinin artırılması gerektiği belirtilmiştir (Özel & Akyol, 2016; Meydan, 2017). Benzer şekilde, Tonbul ve Ata Çiğdem (2024) öğretmen ve öğrencilerin proje geliştirme sürecine yönelik yeterliliklerinde, Xu ve Zhang (2024) ise öğretmenlerin içerik geliştirme ve pedagojik yeterliliklerinde eksiklikler olduğunu vurgulamıştır. Lachebo, Thuo, Demissie ve Labiso (2024b), yürüttükleri araştırmada öğretmenlerin bilimsel içerikli proje yarışmalarına karşı ilgili olmalarına rağmen, bilimsel araştırma süreçleri ve mentorluk konusundaki bilgi eksiklikleri nedeniyle öğrencilere rehberlik etmekte zorlandıklarını, onları bu tür etkinliklere yönlendirme konusunda isteksiz olduklarını ve bu durumun da öğrencilerin yarışmalara hazırlık ve katılım durumlarını olumsuz etkilediğini belirtmiştir.

Süreçte karşılaşılan diğer güçlükler arasında finansal sıkıntılar, malzeme yetersizlikleri ve teknik ekipman desteğinin olmaması da yer almaktadır (Demirel, Baydas, Yılmaz & Goktas, 2013; Edelson, Gordin & Pea, 1999; Krajcik, Soloway, Blumenfeld & Marx, 1998; Meydan, 2017; Pınar, 2025). Eğitim sistemlerinin sınav odaklı yapısına karşın proje süreçlerinin bu sistemlerle uyumlu olmaması ve mevcut proje yazma/yönetme eğitimlerinin işlevsel olmaması da alanyazında bilimsel içerikli proje yarışmalarının uygulanmasını güç duruma sokan diğer faktörlerdendir (Pınar, 2025; Tonbul & Ata Çiğdem, 2024). Bu güçlüklerin giderilmesine yönelik olarak öğretim programı çalışmalarının yürütülmesi, kurumların bu tür yarışmalara yönelik bütçe ayırması, ilgili kurumlarla iş birliği yapılması ve proje geliştirmeye yönelik öğrenci ve öğretmen eğitimlerinin sayı ve içerik bakımından zenginleştirilmesi alanyazında yer alan iyileştirme önerilerindendir (Meydan, 2017; Pınar, 2025; Tonbul & Ata Çiğdem, 2024; Xu

& Zhang, 2024). Bununla birlikte, bilimsel yarışmaların etkinliğini artırmak için medya desteğinin sağlanması ve ödüllerin artırılması da gerekmektedir. Kaykobad (2024), bilim insanlarının ve mühendislerin toplumdaki katkılarının yeterince takdir edilmediğini, bu bağlamda bilimsel yarışmaların da daha fazla görünürlük kazanması gerektiğini savunmaktadır. Bu tür etkinlikler, öğrencilerin bilimsel yeteneklerini sergileyebileceği, toplumda bilim insanlarının daha fazla takdir edilmesini sağlayacak ve fen bilimleri eğitime önemli katkılar sunacak platformlardır. Bu yarışmalar, öğrencilerin bilimsel süreç, mühendislik tasarım ve 21. yüzyıl becerileri gibi becerilerini geliştirmeleri ve STEM alanlarında kariyer hedefi oluşturmaları için güçlü bir motivasyon sağlamaktadır.

Bu çerçevede, bilimsel içerikli proje yarışmalarının fen bilimleri eğitiminde güçlü bir araç olarak kullanılması ve öğrencilere derinlemesine bilgi ve beceri kazandırmak için büyük fırsatlar sunması beklenmektedir. Bu doğrultuda yürütülen çalışma, bilimsel içerikli proje yarışmalarının fen bilimleri eğitimi üzerindeki etkilerine dair alanyazındaki boşlukları gidermeyi hedeflemektedir. Mevcut alanyazında, proje tabanlı öğrenme ve STEM eğitiminin öğrencilerin problem çözme, araştırma, karar verme ve yenilikçi düşünme gibi becerilerini geliştirdiği ve bilimsel okuryazarlığı desteklediği vurgulansa da (Abdul Aziz, 2019; Choiriyah vd., 2024; Thomas, 2000), Türkiye'nin milli teknoloji hamlesi kapsamında öne çıkan Teknofest gibi ulusal ölçekteki özgün bir etkinliğin ortaokul öğrencileri üzerindeki bilişsel, sosyal ve duyuşsal etkilerini inceleyen kapsamlı çalışmaların eksikliği dikkat çekmektedir. Ayrıca, bilimsel içerikli proje geliştirme sürecinde karşılaşılan öğretmen rehberliği eksikliği, finansal sıkıntılar ve sınav odaklı bir eğitim süreci ile uyumsuzluk gibi zorlukların (Demirel vd., 2013; Edelson vd., 1999; Meydan, 2017; Pınar, 2025; Tonbul & Ata Çiğdem, 2024) Teknofest bağlamında öğrencilerin gözünden nasıl deneyimlendiği ve öğrencilerin bu süreci aşmak için nasıl bir çözüm yolu izlediklerine dair çalışmaların alanyazında yer almadığı görülmektedir. Bu araştırma, öğrencilerin motivasyon kaynaklarını ele almayı, proje yarışmalarının öğrencilerin sadece bilişsel kazanımlarına değil, aynı zamanda öz güven, iş birliği, sorumluluk alma gibi sosyal, duyuşsal ve psikomotor gelişimlerine ve toplumsal farkındalık kazanmalarına olan çok boyutlu katkılarını bütüncül bir perspektifle inceleyerek ilgili alanyazına katkı sağlamayı amaçlamaktadır.

Genel olarak bu çalışmada, başvuru sayısı her geçen gün artan Teknofest özelinde, bilimsel içerikli proje yarışmalarının fen bilimleri eğitimi üzerindeki etkileri ve bu yarışmaların öğrencilerin beceri geliştirmedeki rolü ele alınmıştır. Bu bağlamda, araştırmada Teknofest'e katılan ortaokul öğrencilerinin proje yarışması deneyimlerine odaklanılarak, bu yarışmaların onların bilişsel, sosyal ve duyuşsal gelişimlerine katkıları incelenmiştir. Aynı zamanda öğrencilerin karşılaştıkları zorluklar, bu zorluklarla başa çıkma stratejileri ve proje süreçlerinde aldıkları destekler de analiz edilmiştir. Araştırma, bilimsel içerikli proje yarışmaları sürecinde elde edilen deneyimler, bu deneyimlerin öğrencilerin bilim ve teknolojiye olan ilgilerini nasıl şekillendirdiği ve bu süreçte kazandıkları becerilerin onların gelecekteki eğitim ve kariyer yolculuklarına nasıl yön verdiği konusunda gelecek araştırmalar önemli veriler sunmaktadır. Araştırma sonuçlarının, bilimsel içerikli proje yarışmalarının öğrenme-öğretme süreçlerine entegre edilmesine, gençler arasında bu tür etkinliklerin popülerliğinin ve etkinliklere katılımın artırılmasına katkı sağlaması hedeflenmektedir. Uzun vadede, bu sonuçların bilimsel içerikli proje yarışmalarının yaygınlaşmasına, daha fazla öğrencinin bilim ve teknolojiye dair çalışmalara yönelmesine ve nihayetinde toplumsal kalkınmaya destek olmasına yardımcı olacağı öngörülmektedir.

Araştırmanın Amacı

Bu araştırmanın amacı, Teknofest proje yarışmalarına katılan ortaokul öğrencilerinin proje yarışması süreçlerine dair deneyimlerini derinlemesine bir şekilde incelemektir. Bu doğrultuda, araştırmanın problem durumu *"Teknofest proje yarışmalarına katılım sağlayan ortaokul öğrencilerinin proje geliştirme sürecine ilişkin görüşleri nelerdir?"* sorusu etrafında şekillenmektedir. Bu kapsamda, araştırmada öğrencilerin bakış açıları ile aşağıdaki sorulara odaklanılmıştır:

Öğrencilerin;

- Proje yarışmasına katılım nedenleri nelerdir?
- Proje fikrini geliştirme nedenleri nelerdir?
- Proje geliştirme sürecinin katkılarına ilişkin görüşleri nelerdir?
- Proje geliştirme sürecinde yaşadıkları zorluklara ilişkin görüşleri nelerdir?
- Proje geliştirme sürecinde yaşadıkları zorlukları gidermelerine ilişkin görüşleri nelerdir?
- Projeleriyle ilgili hakemlerden gelen dönütlerin beklentilerini karşılamasına ilişkin görüşleri nelerdir?
- Projeleri iyileştirme sürecine ilişkin görüşleri nelerdir?
- Yarışmaya yeniden katılma isteğine ilişkin görüşleri nelerdir?

Araştırma problemi ve probleme bağlı olarak üretilen yukarıdaki araştırma soruları aracılığıyla, Teknofest proje yarışmalarına katılan ortaokul öğrencilerinin deneyimlerinin tüm boyutlarıyla ortaya konulması hedeflenmektedir.

YÖNTEM

Araştırma Modeli

Araştırma, nitel araştırma desenlerinden olan fenomenolojik desen temelinde yürütülmüştür. Fenomenolojik desen, gerçekte farkında olunan ancak derinlemesine ve ayrıntılı bir anlayışa sahip olmadığımız olgulara odaklanarak, bireylerin belirli bir deneyime ilişkin algılarını ortaya çıkarmayı hedeflemektedir (Holstein & Gubrium, 1994; Yıldırım & Şimşek, 2021). Yin (2016) de fenomenolojik araştırmaların, yaşanan deneyimlerin yorumlayıcı bir biçimde analiz edilmesini sağladığını belirtmektedir. Araştırmada bu deseninin tercih etmesinin temel nedeni, Teknofest proje yarışmalarına katılan ortaokul öğrencilerinin sürece ait deneyimlerini kendi öznel bakış açılarından anlamaya odaklanılmasıdır. Fenomenolojik yaklaşım, katılımcıların paylaştığı ortak deneyimleri ortaya koyarak, onların bu süreci nasıl algıladıklarını, süreçte hangi zorluklarla karşılaştıklarını ve ne gibi katkılar edindiklerini kendi ifadeleriyle yansıtmaya imkânı sunmaktadır (Moustakas, 1994). Dolayısıyla, bu araştırma, öğrencilerin Teknofest deneyimlerinin farklı ve derinlemesine yönlerini keşfederek, bilimsel içerikli proje yarışmalarının onlar üzerindeki etkilerini kapsamlı bir şekilde incelemeyi amaçlamaktadır.

Çalışma Grubu

Araştırmanın çalışma grubu 2022-2023 eğitim-öğretim yılında Marmara Bölgesindeki bir büyükşehirin ilçe merkezinde yer alan bir ortaokuldan seçilen 13 öğrenciden oluşmaktadır. Çalışma grubu, nitel araştırmalarda sıklıkla kullanılan ve araştırmacının belirli ölçütlere dayalı olarak bilgi açısından zengin vakaları seçmesini sağlayan amaçlı örnekleme yöntemlerinden ölçüt örneklemeğe göre belirlenmiştir (Patton, 2002; Yıldırım & Şimşek, 2021). Çalışma grubunun belirlenmesinde, öğrencilerin Teknofest proje başvurusunda bulunarak proje çalışmalarına aktif ve gönüllü olarak okul dışı zamanlarda katılım sağlaması temel ölçüt olarak değerlendirilmiştir. Bu ölçüt ile araştırmanın amacına uygun olarak, Teknofest proje süreçlerini deneyimlemiş öğrencilerden derinlemesine veri elde edilmesi hedeflenmiştir.

Nitel araştırmalarda örneklem büyüklüğü, toplanan verilerde yeni bir temanın veya bilginin ortaya çıkmadığı veri doygunluğu ilkesine dayanmaktadır (Charmaz, 2014). Alanyazında, benzer kapsamdaki araştırmalar için 10-20 katılımcının yeterli veri doygunluğunu sağlayabildiğine dair örnekler bulunmaktadır (Guest, Bunce & Johnson, 2006). Bu araştırmada da 13 öğrenciyle yapılan görüşmeler sonucunda, Teknofest proje sürecine ilişkin ana temalara ve öğrenci deneyimlerine dair yeterli derinliğe ulaşılarak veri doygunluğu sağlanmıştır.

Dolayısıyla, 13 öğrenciden elde edilen verilerin araştırma hedeflerini karşılayacak ve fenomenin kapsamlı bir görünümünü sunacak nitelikte olduğu düşünülmektedir.

Çalışma grubunda yer alan öğrencilere ait demografik bilgiler Tablo 1’de yer almaktadır.

Tablo 1. Çalışma Grubunda Yer Alan Öğrencilerin Demografik Özellikleri

Değişken		f (Frekans)
Cinsiyet	Kız	2
	Erkek	11
Sınıf düzeyi	5. sınıf	2
	6. sınıf	2
	7. sınıf	7
	8. sınıf	2
Proje kategorisi	Eğitim teknolojileri	5
	İnsanlık yararına teknoloji	8
Proje takımı	Bireysel	5
	Grup	8
Toplam		13

Tablo 1’deki öğrencilerin demografik özellikleri incelendiğinde, çalışma grubunda çoğunlukla erkek öğrenciler (11 öğrenci) ve özellikle 7. sınıf öğrencileri (7 öğrenci) yer almaktadır. Bunun yanı sıra, öğrencilerin insanlık yararına teknoloji kategorisindeki projelerde yoğunlaştığı (8 öğrenci) ve grup olarak çalıştıkları (8 öğrenci) görülmektedir.

Veri Toplama Araçları

Araştırma kapsamında öğrencilerin görüşleri yarı yapılandırılmış odak grup görüşmeleri ile toplanmıştır. Bu kapsamda yarı yapılandırılmış görüşme soru formu hazırlanmıştır. Hazırlanan soru formunda aşağıdaki durumlara ait öğrencilerin görüşlerini elde etmeye yönelik sorulara yer verilmiştir:

- Öğrencilerin yarışmaya katılım nedenleri,
- Proje fikrinin nasıl geliştirdikleri,
- Proje sürecinin katkıları,
- Proje süreci içerisinde yaşadıkları güçlükler,
- Yaşadıkları güçlükleri gidermek için neler yaptıkları,
- Projeye yapılan hakem dönütlerinin beklentileri karşılama durumu,
- Projelerin iyileştirilmesi ve
- Proje yarışmasına yeniden katılma istekleri.

Hazırlanan soru formuna fen bilgisi eğitimi alanında görev yapan iki uzman tarafından incelendikten ve yarışma deneyimine sahip olan iki farklı öğrenciyle anlaşılabilirlik açısından değerlendirildikten sonra son hali verilmiştir.

Veri Toplama Süreci

Araştırmanın verileri, 2022-2023 eğitim-öğretim yılının ikinci döneminde toplanmıştır. Araştırma kapsamında öncelikle öğrencilere Teknofest proje yarışmasının içeriği ile ilgili bilgilendirme yapılmış, ardından yarışmaya katılmak isteyen öğrencilerle okul dışı zamanlarda proje geliştirme süreci basamakları takip edilerek öğrencilerin projelerini oluşturmaları sağlanmıştır. Süreç içerisinde Teknofest proje yarışmalarının ortaokul kademesindeki eğitim teknolojileri ve insanlık yararına teknolojiler alanında dokuz proje grubu ile proje geliştirme çalışmaları yürütülmüştür. Öğrenciler projelerini oluşturduktan sonra proje ön değerlendirme raporları oluşturulmuş ve yarışma başvurusu yapılmıştır. Yürütülen dokuz proje

çalışmasından ön elemesi başarıyla tamamlanan projeler için hakem dönütleri doğrultusunda gerekli iyileştirme ve güncellemeler yapılarak proje detay raporları oluşturulmuş ve ikinci aşamada değerlendirilmek üzere sisteme yüklenmiştir.

Veri toplama süreci öncesinde proje danışman öğretmenlerinin de görev yaptığı araştırmanın yürütüleceği okul yönetiminden gerekli izinler alınmıştır. Ayrıca öğrencilerin okul dışı zamanlarda katıldıkları proje geliştirme süreçleri ve veri toplama işlemleri için kendilerinden gönüllü katılım formu, ebeveynlerinden de veli onam formları alınarak etik kurallar çerçevesinde veri toplama süreci yürütülmüştür. Araştırma süresince gizlilik ilkelerine titizlikle riayet edilmiş, elde edilen tüm veriler bilimsel amaçla ve toplu olarak değerlendirilerek kişisel verilerin korunması sağlanmıştır.

Araştırma verileri bu sürece aktif olarak katılan öğrencilerden araştırmaya gönüllü olarak katkı sağlamak isteyen 13 öğrenciden elde edilmiştir. Veriler proje geliştirme ve yarışma süreci tamamlandıktan sonra öğrencilerle yarı yapılandırılmış odak grup görüşmeleri ile toplanmıştır. Görüşmeler, öğrencilerin uygun oldukları zaman dilimlerinde, proje grupları odağında gerçekleştirilmiş ve her bir grup için görüşmeler ortalama 30 dakika sürmüştür. Görüşmeler sırasında öğrencilerden elde edilen bilgilerin bilimsel amaçla ve toplu olarak değerlendirileceği ve bu süreçte kişisel verilerinin tamamen korunacağı vurgulanmıştır. Görüşmelerden elde edilen veriler yazılı olarak kayıt altına alınmıştır.

Verilerin Analizi

Araştırma verileri, toplanan verileri açıklığa kavuşturacak kavram ve ilişkileri ortaya çıkarmayı hedefleyen içerik analizi yöntemiyle analiz edilmiştir. Bu analiz süreci, elde edilen ham verilerin derinlemesine işlenmesini, yeni kavramların ve temaların keşfedilmesini sağlamaktadır (Neuman, 2014; Yıldırım & Şimşek, 2021). Verilerin analizinde ve bulguların görselleştirilmesinde MAXQDA 2020 paket programından faydalanılmıştır.

Bu çalışmada veri kodlama ve tema oluşturma süreçleri tek araştırmacı tarafından yürütülmüştür. Bu tercih, araştırmacının Teknofest proje yarışmaları süreci ve nitel araştırma yöntemleri konusundaki bilgi ve deneyimine dayanmaktadır. Nitel araştırmalarda tek kodlayıcı kullanımının getirebileceği potansiyel öznelliği en aza indirmek ve çalışmanın güvenilirliğini ile geçerliğini sağlamak adına da çeşitli stratejiler titizlikle işe koşulmuştur.

Bu kapsamda veri toplama, kodlama, temalaştırma ve bulguların yorumlanması dahil olmak üzere tüm analiz süreçleri detaylı ve şeffaf bir şekilde yürütülmüştür. Analizler tamamlandıktan sonra, ortaya çıkan kodlar, temalar ve bulgular fen eğitimi alanında uzman bir akademisyenle paylaşarak geri bildirim alınmıştır.

Yürütülen bu akran denetimi süreci, araştırmacının olası önyargılarını sorgulamasına, analizlerin veriyle tutarlılığını dış bir bakış açısıyla değerlendirmesine ve bulguların kapsamlılığını teyit etmesine yardımcı olmuştur. Bu uygulama, çalışmanın güvenilirliğine ve inandırıcılığına önemli katkı sağlamıştır (Creswell & Poth, 2018).

Bulguların sunumunda, öğrenci görüşmelerinden zengin ve doğrudan alıntılara bolca yer verilmiştir. Bu strateji, okuyucunun araştırmacının yorumlarıyla katılımcıların orijinal ifadeleri arasındaki bağlantıyı görmesini sağlayarak bulguların inandırıcılığını artırmaktadır (Miles, Huberman & Saldaña, 2018). Öğrenci alıntıları, Ö1, Ö2, ... Ö13 şeklindeki kodlamalarla sunulmuştur.

Öte yandan araştırma bulguları, yalnızca ortaya çıkan temaları sunmakla kalmayıp, öğrencilerin deneyimlerinin bağlamını ortaya koyan ayrıntılı betimlemelerle desteklenmiştir. Bu derinlemesine açıklama işlemi, okuyucunun bulguları kendi bağlamına ne ölçüde aktarabileceğini değerlendirmesine yardımcı olarak araştırmanın aktarılabilirliğini güçlendirmektedir (Creswell & Poth, 2018).

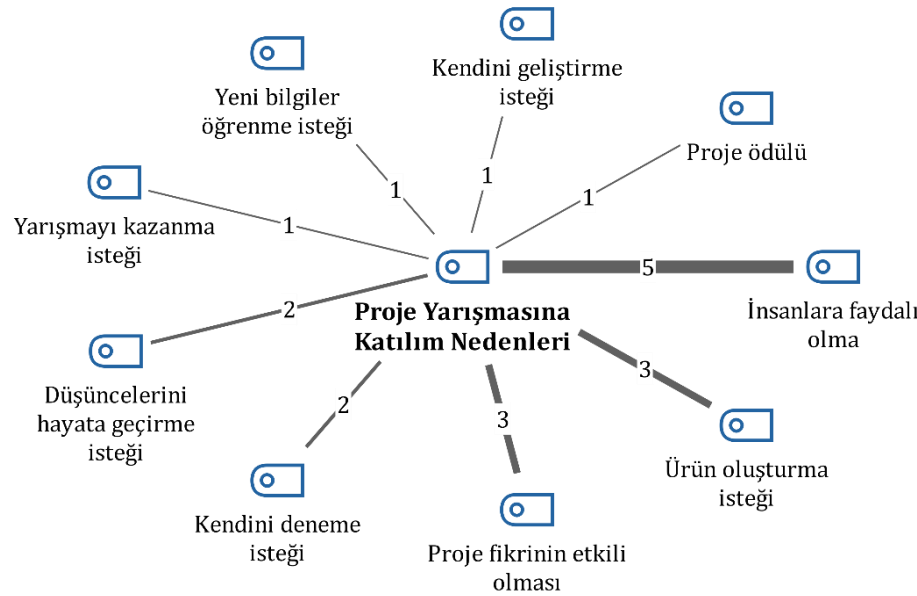
Verilerin sunumu için MAXQDA 2020 paket programında kod haritaları ve grafikler hazırlanmıştır. Bu görsellerde, kodlara ve kodların sıklığını gösteren çizgilere yer verilmiştir. Görseldeki çizginin kalınlığı, o koda ait cevabın daha fazla sıklıkta vurgulandığını göstermektedir.

BULGULAR

Araştırmadan elde edilen bulgulara görüşme soruları doğrultusunda oluşturulan uygun alt başlıklar içerisinde yer verilmiştir. Araştırma bulguları öğrencilerin yarışmaya katılım nedenleri, proje fikrini geliştirme nedenleri, proje sürecinin katkıları, proje süreci içerisinde yaşanan zorluklar ve gidermek için yapılanlar, hakem dönütlerinin beklentileri karşılaması, projelerin geliştirilmesi ve yarışmaya yeniden katılma istekleri temelinde ilgili başlıklarda sunulmuştur.

Proje Yarışmasına Katılım Nedenlerine İlişkin Bulgular

Araştırma kapsamında ilk olarak öğrencilerin proje yarışmasına katılım nedenleri incelenmiştir. Öğrencilerin proje yarışmasına katılım nedenleriyle ilgili yapılandırılmış görüşmelerden elde edilen bulgular Şekil 1’de sunulmuştur.



Şekil 1. Öğrencilerin Proje Yarışmasına Katılım Nedenlerine İlişkin Görüşleri

Öğrencilerin proje yarışmalarına katılım nedenlerine dair görüşlerini yansıtan Şekil 1’deki bulgular incelendiğinde, öğrencilerin başlıca motivasyonları ‘insanlara faydalı olma’, ‘ürün oluşturma isteği’ ve ‘proje fikrinin etkili olması’ şeklinde sıralanmaktadır. Bu motivasyonlar, bilimsel içerikli proje yarışmalarının öğrencilerin bilimsel süreç becerilerinin yanı sıra sosyal ve duygusal gelişimlerini destekleyen güçlü bir araç olma özelliğiyle örtüşmektedir.

Ö7 kodlu öğrencinin “Yaptığımız projeyi herkese tanıtip geliştirilip ülke yararına kullanılması için...” cevabı, hem ‘insanlara faydalı olma’ hem de ‘ürün oluşturma isteği’ kodlarına örnektir. Benzer şekilde, Ö8 kodlu öğrencinin “Ülkemize yararlı bir teknoloji sunmak için...” cevabı da ‘insanlara faydalı olma’ motivasyonunu vurgulamaktadır. Bu durum, öğrencilerin projeleri aracılığıyla karşılaştıkları sorunları çözme çabalarının onlara sosyal sorumluluk bilinci kazandırdığını ve topluma katkı sağlayacak çözümler üretmelerine imkân tanıdığını yansıtmaktadır.

Öğrenciler ayrıca ‘kendini deneme isteği’ ve ‘düşüncelerini hayata geçirme isteği’ nedeniyle de Teknofest gibi proje yarışmalarına katılım sağladıklarını belirtmişlerdir. Örneğin, Ö11 kodlu öğrenci “Bu tarz yarışmalara katılıp kendimi denemem.” ifadesiyle ‘kendini deneme isteği’ni, Ö13 kodlu öğrenci ise “Fikirlerimizi hayata geçirmek için...” ifadesiyle ‘düşüncelerini hayata

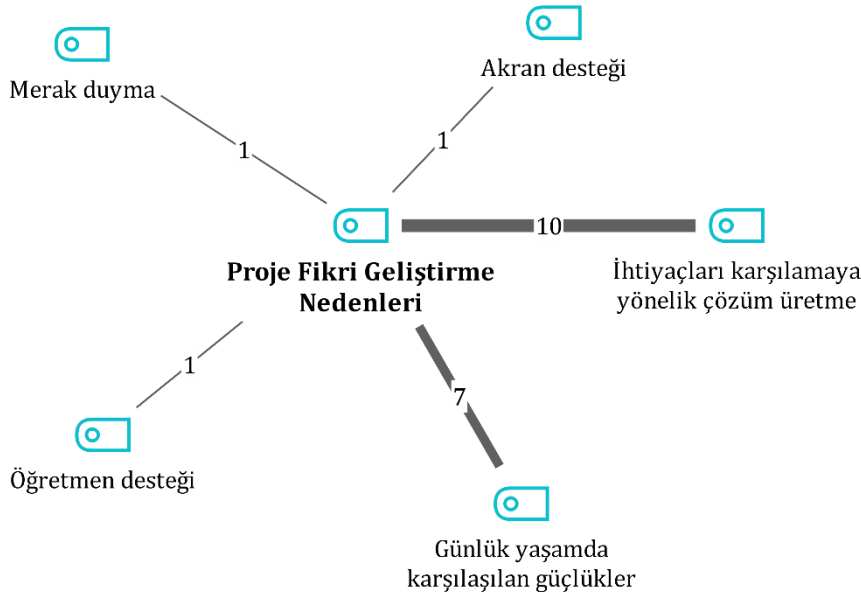
geçirme isteği'ni dile getirmiştir. Bu bulgu, öğrencilerin bilimsel süreçleri deneyimleyerek problem çözme, analitik düşünme ve yaratıcı ürün geliştirme gibi beceriler edindiklerini ortaya koymaktadır. Genel olarak Teknofest gibi bilimsel içerikli proje yarışmaları, öğrencilere bilimsel düşünme süreçlerini keşfetme ve somut projeler geliştirme fırsatı sunmaktadır.

Öğrenciler, daha az sıklıkla da olsa, 'yeni bilgiler öğrenme isteği', 'kendini geliştirme isteği', 'yarışmayı kazanma isteği' ve 'proje ödülü' gibi faktörlerin de yarışmaya katılım nedenleri arasında olduğunu belirtmişlerdir. Ö1 kodlu öğrencinin "Yazılım vb. konularda kendimi geliştirmek için ve yanlışlarımı öğrenmek için." ifadesinde yer alan yazılım gibi konularda kendini geliştirmek ve yanlış bilgilerini düzeltmek amacıyla yarışmaya katıldığını belirtmesi, 'kendini geliştirme isteği' ve 'yeni bilgiler öğrenme isteği' kodlarına örnektir. Elde edilen bulgular, öğrencilerin akademik başarılarını artırma, bilimsel süreçleri daha iyi kavrama, eleştirel düşünme becerilerini geliştirme, araştırma yapma gibi faydalarla örtüşmektedir. Ayrıca para ödülleri gibi teşviklerin de öğrencilerin uygulamalı proje yarışmalarına katılımını artıran önemli bir faktör olduğu görülmektedir.

Araştırmaya katılan öğrencilerin proje yarışmasına katılım nedenleri incelendiğinde genel olarak, insanlara faydalı olma, ürün oluşturma, etkili fikir üretme, düşüncesini hayata geçirme ve yeni bilgiler öğrenmeye ilişkin ifadelerin öğrencilerin cevaplarında yer aldığı görülmektedir. Bu durum, öğrencilerin Teknofest proje yarışmalarına katılım nedenlerinin yarışmanın amaçları ile örtüştüğünü yansıtmaktadır.

Proje Fikri Geliştirme Nedenlerine İlişkin Bulgular

Araştırma kapsamında öğrencilerin proje fikirlerini nasıl geliştirdikleri, ortaya koydukları sorgulanmıştır. Bu kapsamda elde edilen bulgulara Şekil 2'de yer verilmiştir.



Şekil 2. Öğrencilerin Proje Fikri Geliştirmelerine İlişkin Görüşleri

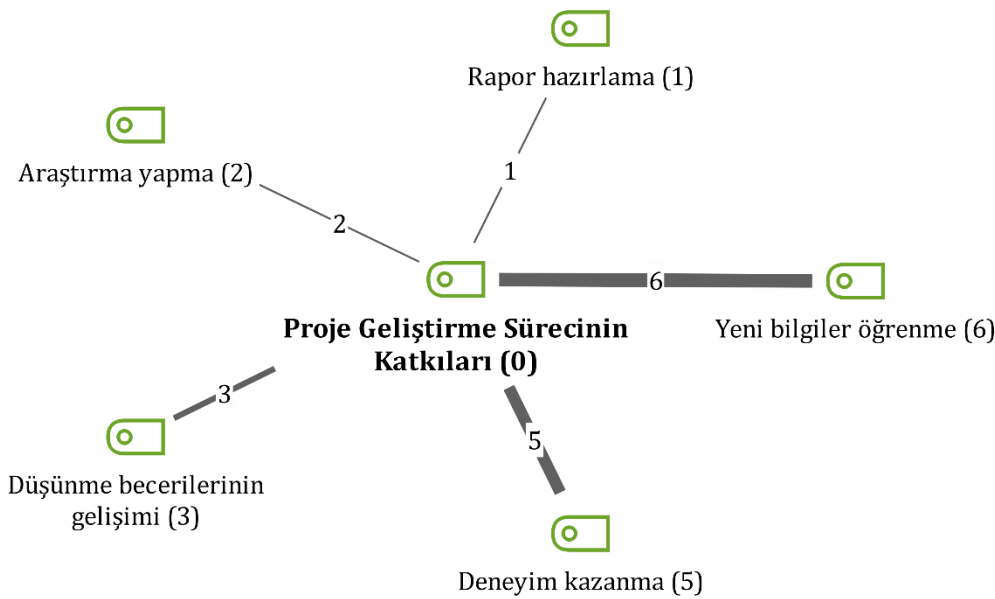
Şekil 2'deki öğrencilerin proje fikri geliştirme süreçlerine ilişkin görüşleri incelendiğinde, öğrencilerin çoğunlukla insanların ihtiyaçlarına çözüm bulma arzusu ve günlük hayatta karşılaştıkları zorluklar nedeniyle proje fikirlerini oluşturdukları anlaşılmaktadır. Bu kodlara örnek olarak, Ö5'in "Yazları çok sıcak olduğunda herkesin canı soğuk bir şeyler ister. Evden soğuk su alarak çıksak bile bir süre sonra ısınıyor. Bu sebeple mini bir buzdolabı tasarladık." ifadesi ve Ö8'in "Ülkemizde olan kar yağışı sorunundan yola çıktık ve buna çözüm üretmeye karar verdik." cevabı gösterilebilir. Bazı öğrenciler de proje fikri geliştirmelerinde farklı motivasyonların yer aldığını vurgulamışlardır. Örneğin, Ö1 "Öğretmenimizin beğenisi ve

tavsiyesiyle...” ifadesinde proje fikrinin danışman öğretmeninin beğenisi ve desteğiyle şekillendiğini belirtirken, Ö13 de “Arkadaşlarımla konuşurken nasıl bir proje üretebiliriz diyerek düşündük.” şeklindeki cevabında arkadaşlarıyla iş birliği yaparak proje fikrini ortaya koyduklarını ifade etmiştir. Ö9 ise “Merak duyduğum konuydu insanlar için olurdu.” cevabında proje fikrinin merak duyduğu bir konuyla ilgili olmasının geliştirme sürecinde etkili olduğunu belirtmiştir.

Genel olarak, öğrencilerin proje fikirlerinin günlük yaşamdaki zorluklara pratik çözümler üretme ve insanların ihtiyaçlarını karşılama üzerine kurulu olduğu söylenebilir. Bu eğilim, Teknofest proje yarışmalarının yarışmacılara kazandırmayı hedeflediği nihai amaçlarla da paralellik göstermektedir.

Proje Geliştirme Sürecinin Katkılarına İlişkin Bulgular

Çalışmada öğrencilerin proje geliştirme sürecinin katkılarına ilişkin görüşleri de araştırılmıştır. Bu çerçevede yarı yapılandırılmış görüşlerden elde edilen bulgular Şekil 3’teki gibidir.

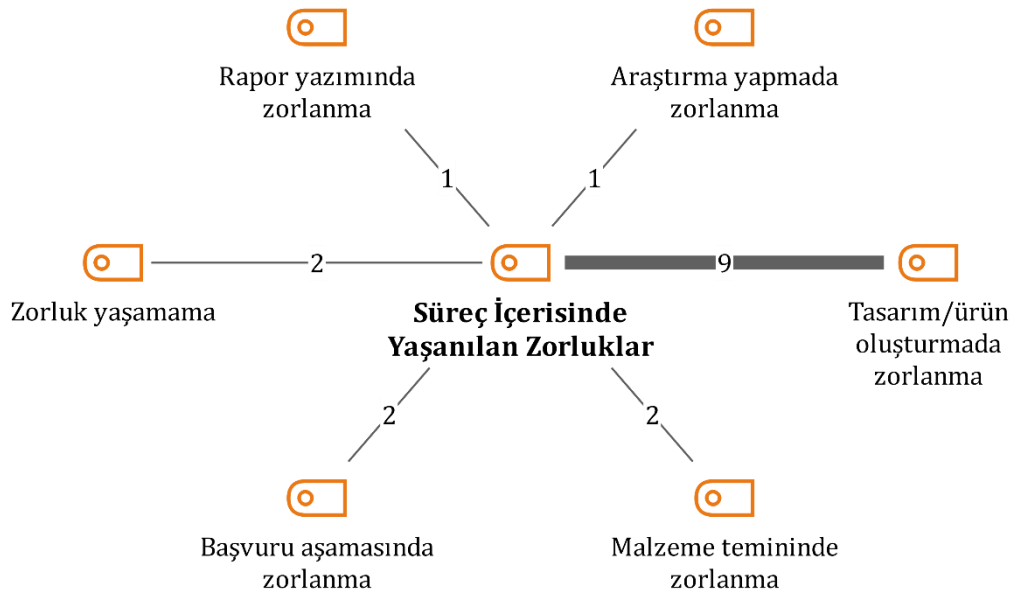


Şekil 3. Öğrencilerin Proje Geliştirme Sürecinin Katkılarına İlişkin Görüşleri

Şekil 3’te sunulan bulgular, proje sürecinin öğrencilere bilişsel beceriler ve deneyim kazanma konusunda önemli katkılar sağladığını göstermektedir. Bu bulgular, proje sürecinin öğrencilerin yeni bilgiler edinmesine, deneyim kazanmasına ve düşünme yeteneklerini geliştirmesine yönelik katkılarına açıkça ortaya koymaktadır. Örneğin, Ö7 kodlu öğrencinin “Fazlasıyla oldu. Şu şekilde katkısı oldu: Parçalar hakkında daha fazla bilgi sahibi oldum. En azından bir fikir geliştirdim ve düşüncelerim gelişti.” ifadesi bu durumu destekler niteliktedir. Ayrıca, öğrenciler süreç içerisinde bilimsel araştırma yapma ve rapor hazırlama yeterlikleri kazandıklarını da belirtmişlerdir. Ö5’in “Oldu. İnternet üzerinden araştırma yapmayı ve bu sayede bilmediğim bilgileri öğrendim.” cevabı, öğrencilerin aktif araştırma yaparak bilgi edinme süreçlerini yansıtırken; Ö4’ün, “Tabii ki de... Örnek vermek gerekirse raporları yazma konusunda bana katkı sağladığını düşünüyorum.” şeklindeki beyanı, akademik raporlama becerilerindeki gelişimi vurgulamaktadır. Öğrencilerin süreçten elde ettikleri bu kazanımlar, Teknofest proje yarışmalarının öğrenme çıktılarına yönelik beklentileriyle uyum sergilemektedir.

Proje Geliştirme Sürecinde Yaşanılan Zorluklara İlişkin Bulgular

Araştırma kapsamında, öğrencilerin proje süreçlerinde karşılaştıkları zorluklara dair görüşleri de detaylıca incelenmiştir. Bu zorluklara ilişkin bulgular Şekil 4’te sunulmuştur.

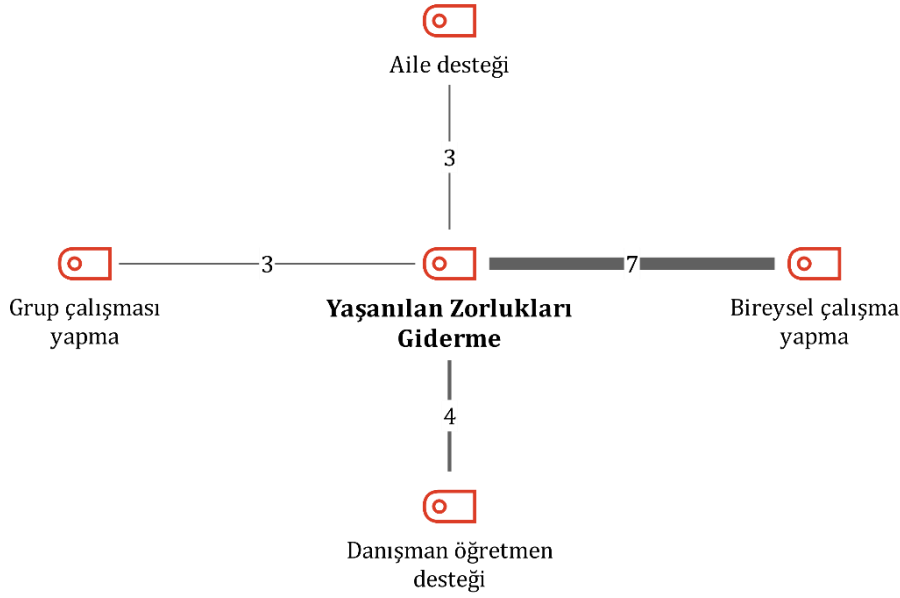


Şekil 4. Öğrencilerin Süreç İçerisinde Yaşadıkları Zorluklara İlişkin Görüşleri

Şekil 4'te yer alan bulgular, öğrencilerin Teknofest proje sürecinde çeşitli zorluklarla karşılaştıklarını ortaya koymaktadır. Öğrenci yanıtları, özellikle tasarım veya ürün oluşturma, malzeme temini ve başvuru aşamalarında yoğunluklu olarak güçlükler yaşandığını göstermektedir. Bu duruma örnek olarak, Ö7'nin "*Oldu, parça bulma süreci. Aynı zamanda maketin dış kalıbının basımında hatalar oldu.*" ifadesi hem 'tasarım/ürün oluşturmada zorlanma' hem de 'malzeme temininde zorlanma' kodlarına karşılık gelmektedir. Ö2 kodlu öğrenci de "*Evet. Az kalsın projemiz kayıt olmuyordu.*" cevabıyla başvuru aşamasındaki zorluklara dikkat çekmiştir. Bununla birlikte, öğrenciler süreç içerisinde araştırma yapma ve rapor yazma aşamalarında da güçlükler deneyimlediklerini belirtmişlerdir. Örneğin, Ö11'in "*Araştırma yaparken zorlandım.*" yanıtı araştırma sürecindeki zorlanmayı, Ö6'nın "*Raporu çok güzel yazmaya çalıştığımız için zor oldu.*" ifadesi ise raporlama sürecindeki güçlüğü yansıtmaktadır. Bu genel eğilimden farklı olarak, Ö4 ve Ö13 kodlu öğrenciler ise proje sürecinde herhangi bir zorlukla karşılaşmadıklarını ifade etmişlerdir. Elde edilen bulgular, öğrencilerin genel olarak fikirlerini somut bir ürüne dönüştürme aşamasında güçlükler yaşadıklarını ortaya koymaktadır.

Proje Sürecinde Yaşanılan Zorlukları Gidermeye İlişkin Bulgular

Öğrencilerin proje sürecinde yaşadıkları zorlukları nasıl giderdikleri de araştırma kapsamında cevap aranan sorulardan bir diğeridir. Bu kapsamda görüşmelerden elde edilen bulgular Şekil 5'te sunulmuştur.

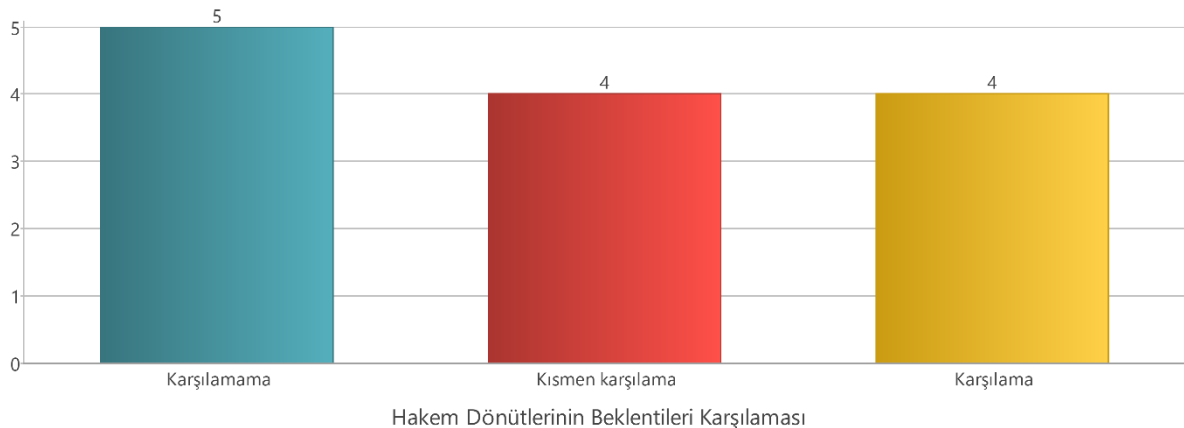


Şekil 5. Öğrencilerin Yaşadıkları Zorlukları Gidermelerine İlişkin Görüşleri

Şekil 5'teki öğrencilerin yaşadıkları zorlukları gidermelerine ilişkin görüşlerine ait bulgular, öğrencilerin ağırlıklı olarak bireysel çalışmalar yaparak karşılaştıkları güçlükleri aştıklarını göstermektedir. Ö3'ün "*Daha sıkı çalıştım.*" cevabı ile Ö10'un "*Bilgi edinmeye çalıştım.*" cevabı bu durumu örneklendirmektedir. Bunun yanı sıra öğrenciler süreç içerisindeki güçlükleri aşmak için danışman öğretmenlerinden ve ailelerinden destek aldıklarını belirtmişlerdir. Ö12'nin "*Hocamdan ve ailemden destek aldım.*" cevabı 'danışman öğretmen desteği' ve 'aile desteği' kodlarına eklenmiştir. Ayrıca öğrenciler süreç içerisindeki zorlukları grup çalışması yaparak aştıklarını ifade etmişlerdir. Ö7'nin "*Grup arkadaşım ile daha fazla çalıştık.*" cevabı zorlukları grup üyeleri ile iş birliği yaparak giderdiklerini yansıtmaktadır. Bu bulgular, öğrencilerin süreç içerisinde karşılaştıkları güçlükleri aşmada bireysel ve grup çalışmalarına ek olarak danışman öğretmen ve ebeveyn desteğinin önem taşıdığını ortaya koymaktadır.

Hakem Dönütlerinin Beklentilerine Karşılmasına İlişkin Bulgular

Öğrencilerin projelerine yönelik hakemlerden gelen değerlendirmelerin yeterliliğine ilişkin görüşleri de araştırma kapsamında incelenmiştir. Bu doğrultuda hakem dönütlerinin öğrencilerin beklentilerini karşılama durumuna ait bulgular Şekil 6'daki gibidir.



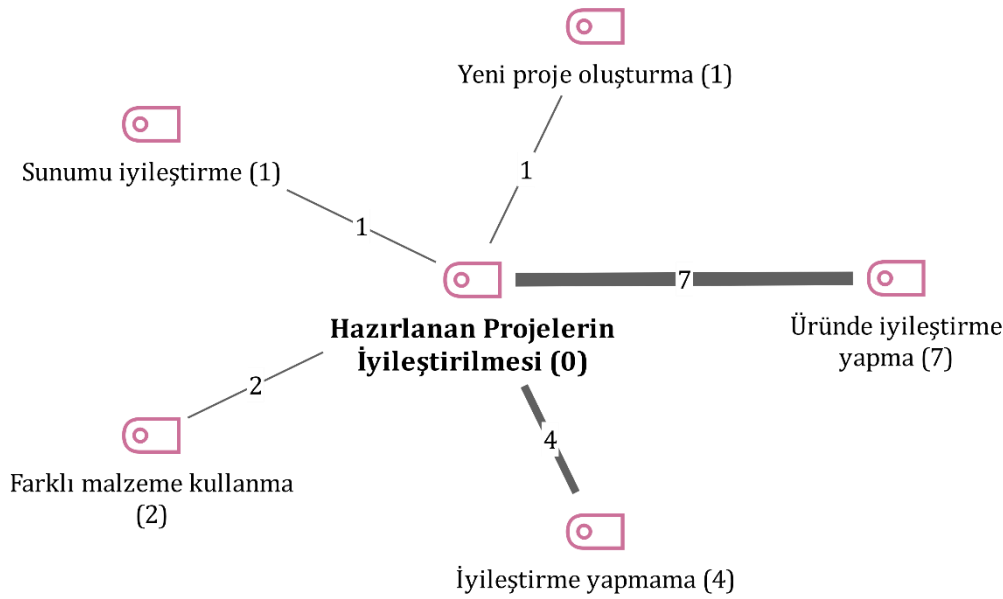
Şekil 6. Öğrencilerin Hakem Dönütlerinin Beklentilerini Karşılmasına İlişkin Görüşleri

Öğrencilerin projelerine yönelik sunulan hakem dönütlerinin beklentilerini karşılama durumu ile ilgili Şekil 6'daki bulgular, hakem dönütlerinin öğrencilerden 5'inin beklentilerini karşılamadığını, 4 öğrencinin ise beklentilerini kısmen karşıladığını ortaya koymaktadır.

Ö12'nin "Hayır, karşılamıyor. Çünkü biz bu kadar uğraşmışken kabul edilmemesi ben üzdü." cevabı hakemlerden gelen proje dönütlerinin öğrencinin beklentilerini karşılamadığını göstermektedir. Ö9'un "Bazen karşıladı, bazen karşılamadı." cevabı ise 'kısmen karşılama' koduna eklenmiştir. Ayrıca öğrencilerden 4'ü görüşmeler sırasında hakemlerin proje dönütlerinin beklentilerini karşıladığını ifade etmiştir. Ö5 kodlu öğrencinin "Beklentimiz barajı geçmekti. Yaklaştık ama olmadı. Ama bu durumdan ötürü hakemleri sorgulayamam. Herhangi bir hakem hatası olduğunu düşünmüyorum." şeklindeki cevabı hakemlerin projeye ilişkin dönütlerinin beklentilerini karşıladığını yansıtmaktadır.

Projelerin İyileştirilmesine İlişkin Bulgular

Araştırmaya katılan öğrencilerin projelerini iyileştirmelerine ilişkin görüşleri incelenerek elde edilen bulgulara Şekil 7'de yer verilmiştir.

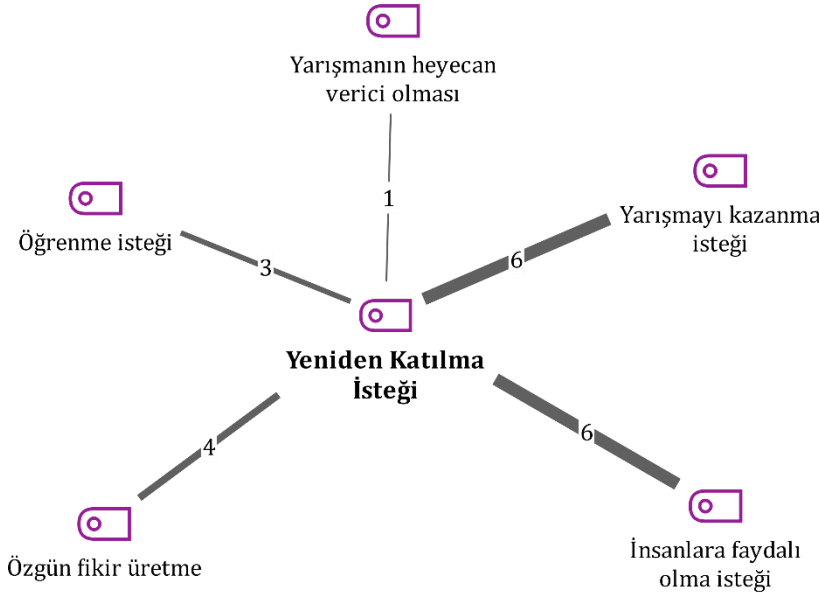


Şekil 7. Öğrencilerin Hazırladıkları Projelerin İyileştirilmesine İlişkin Görüşleri

Şekil 7'deki bulgular, öğrencilerin projelerini geliştirme konusundaki eğilimlerini ortaya koymaktadır. Öğrenciler ağırlıklı olarak üründe iyileştirme yapma ve farklı malzemeler kullanma isteği belirtmişlerdir. Örneğin, Ö2 "Daha çok peltier kullanmak isterdim." ifadesiyle ürün geliştirme arzusunu dile getirirken, Ö11 "Robotun sadece önüne değil de her tarafına demir koyarım." diyerek malzeme değişikliğine yönelik düşüncesini ortaya koymuştur. Bununla birlikte, öğrencilerin bir kısmı sunumda iyileştirme yapma ve yeni proje hazırlama niyetlerini de dile getirmişlerdir. Ö10'un "Daha çok bilgi ve teknoloji dolu bir sunum yapardım." cevabı sunum kalitesini artırma isteğini yansıtmaktadır. Diğer yandan, dört öğrenci de projelerinde herhangi bir iyileştirme yapılmasına gerek duymadıklarını belirtmiştir. Bu duruma Ö5'in "Projenin eksikliği olmadığını düşündüğüm için bir şey değiştirmedim." şeklindeki yanıtı örnek teşkil etmektedir. Bulgular genel olarak, öğrencilerin mevcut ürünlerini geliştirme ve kullandıkları materyal tercihlerini revize etme eğiliminde olduklarını, ayrıca sunumlarını güncelleyerek daha etkili hale getirme ihtiyacı hissettiklerini göstermektedir.

Yarışmaya Yeniden Katılım İsteğine İlişkin Bulgular

Araştırma kapsamında son olarak öğrencilerin yarışmaya yeniden katılım istekleri ve bu durumun nedenleri incelenmiştir. Bu doğrultuda 13 öğrencinin de araştırmaya yeniden katılmak istedikleri tespit edilmiştir. Öğrencilerin yarışmaya yeniden katılım isteklerinin nedenlerine ilişkin bulgular Şekil 8'deki gibidir.



Şekil 8. Öğrencilerin Yarışmaya Yeniden Katılma İsteklerine İlişkin Görüşleri

Şekil 8'deki bulgular incelendiğinde, öğrencilerin yarışmaya yeniden katılma isteklerinin temelinde ağırlıklı olarak yarışmayı kazanma arzusu ve insanlığa faydalı olma isteği gibi faktörlerin yer aldığı belirlenmiştir. Bu duruma örnek olarak, Ö1'in "Evet, çünkü aklımda Teknofest kazanmak benim hedefim." ifadesi yarışmayı kazanma isteğini yansıtırken, Ö6'nın "Evet, çünkü ülkemiz ve dünya için güzel fikirler üretmeyi seviyorum." cevabı toplumsal fayda odaklı bir isteği ortaya koymaktadır. Bu bulgulara ek olarak, öğrencilerin özgün fikir üretme, yeni bilgiler öğrenme ve yarışma sürecinin heyecan verici olması gibi nedenlerle tekrar katılmak istediklerini ifade ettikleri görülmüştür. Örneğin, Ö11 "Evet, çünkü insan kendini zorlayarak öğrenir." diyerek öğrenme arzusunu belirtirken, Ö13'ün "İsterdim. Yeni fikirler her zaman bir şeye yardımcı olabilir." cevabı hem insanlara faydalı olma hem de özgün fikir üretme isteğini vurgulamaktadır. Araştırmaya katılan tüm öğrencilerin yarışmaya yeniden katılım sağlamak istemesinin yarışma ve proje geliştirme sürecinin olumlu katkılarıyla bağlantılı olduğu düşünülmektedir.

SONUÇLAR ve TARTIŞMA

Bilimsel içerikli proje yarışmalarının olumlu kazanımlarından yola çıkarak yürütülen bu araştırmada Teknofest proje yarışmalarına katılan ortaokul öğrencilerinin proje yarışması sürecindeki deneyimlerinin derinlemesine incelenmesi amaçlanmıştır. Bu doğrultuda, öğrencilerin görüşleri, proje yarışmasına katılım nedenleri, proje fikirlerini nasıl geliştirdikleri, proje sürecinin katkıları, süreç içerisinde karşılaştıkları güçlükler ve bu güçlükleri nasıl giderdikleri, hakem görüşlerinin beklentilerini karşılama durumu, projelerinde iyileştirme yapma ve yarışmaya yeniden katılma istekleri gibi çeşitli boyutlardaki görüşleri değerlendirilmiştir.

Araştırma kapsamında ilk olarak öğrencilerin proje yarışmasına katılım nedenleri incelenmiş ve öğrencilerin insanlara faydalı olma, ürün oluşturma ve kendini deneme isteğinin yarışma katılmalarındaki başlıca nedenler arasında yer aldığı sonucuna ulaşılmıştır. Benzer şekilde Topcu ve Kumru (2022) araştırmalarında öğrencilerin bilim fuarı proje çalışmalarına katılım nedenlerini incelemiş ve bu nedenler arasında topluma fayda sağlamanın da bulunduğunu belirtmişlerdir. Karaer ve Soytürk (2021) de araştırmalarında öğrencilerin insanlığa faydalı olmak için proje hazırlamayı istediklerini vurgulamaktadırlar. Tarhan ve Gülmez (2021) araştırmalarında Japonya'daki öğrencilere girişimcilik becerisinin kazandırılmasında proje tabanlı öğrenme etkinliklerinden yararlanma nedenleri incelemiş ve proje çalışmalarındaki nihai hedefin topluma faydalı olmak şeklinde vurgulandığını ifade etmişlerdir. Bu durum, Çetin ve Şengezer (2013) tarafından yürütülen bir araştırmada öğrencilerin proje çalışmalarının

toplumsal fayda sağladığını düşündükleri şeklinde vurgulanmıştır. Araştırmada öğrencilerin katılım nedenleri arasında en çok vurgu yaptıkları diğer bir durum da ürün oluşturma isteğidir. Alanyazındaki çalışmalarda da proje süreci dendiğinde öğrencilerin zihinlerinde çağrışım yapan kavramlar arasında ürün oluşturma öncelikli olarak yer aldığı belirtilmektedir (Karakoç Topal, 2022; Topcu & Kumru, 2022). Nitekim, öğrenciler Teknofest proje yarışmaları kapsamında proje geliştirme sürecinde insanlığa fayda sağlayacak bir ürün geliştirmek için çalışmalarını yürütmüşlerdir. Bu durumun da öğrencilerin cevaplarında proje fikrinin kaynağı olarak insanlara faydalı olma ve ürün oluşturma görüşlerine ağırlık vermesine neden olduğu düşünülmektedir. Öte yandan öğrencilerin proje yarışmasına katılım nedenleri arasında yeni bilgiler öğrenme, kendini geliştirme ve yarışmayı kazanma isteğini ve proje ödülünü sıraladıkları belirlenmiştir. Öğrencilerin bilimsel yarışmalara katılım nedenleri, çoğunlukla merak duygusu, öğrenme isteği ve kişisel gelişim isteğiyle yakından ilişkilidir. Yapılan araştırmalar, gençlerin bu tür etkinliklere katılmalarının en önemli sebeplerinden birinin yeni bilgiler edinme ve bilimsel çalışmalara olan meraklarını tatmin etme isteği olduğunu ortaya koymaktadır (Blankenburg vd., 2016; Meydan, 2017). Czerniak ve Lumpe (1996) tarafından yürütülen araştırmada, öğrencilerin bilim yarışmalarına katılma nedenleri arasında yeni bilgiler öğrenme, akademik başarılarını artırma ve ödüllendirme gibi faktörlerin ön plana çıktığı vurgulanmıştır. Benzer şekilde Dionne, Reis, Trudel, Guillet, Kleine & Hancianu (2012), bilimsel içerikli proje çalışmalarına katılmalarında bilimsel çalışmalara yönelik ilgi, tatmin, kendini geliştirme ve sosyalleşme gibi motivasyon kaynaklarının etkili olduğunu belirtmiştir. Bu durum, proje yarışmalarının sadece rekabet odaklı etkinlikler olmadığını, aynı zamanda öğrencilerin bilimsel meraklarını tatmin edebilecekleri, yeni bilgiler edinebilecekleri ve akademik becerilerini geliştirebilecekleri zengin öğrenme ortamları sunduğunu yansıtmaktadır. Başka bir deyişle, proje yarışmaları, öğrencilerin bilimsel süreçlere aktif olarak katılarak bilgiye ulaşma, problem çözme ve yaratıcılıklarını kullanma becerilerini geliştirmelerine imkân sağlar. Bu sayede öğrenciler, bilgiyi üreten ve anlamlandıran bireyler haline gelirler.

Araştırmada, öğrencilerin proje fikirlerini; tespit ettikleri ihtiyaçlara yönelik çözümler geliştirme, kişisel meraklarını giderme ve günlük yaşamda karşılaşılan problemlere yanıt arama süreçleri sonucunda oluşturdukları belirlenmiştir. Alanyazındaki araştırmalar da ortaokul öğrencilerinin proje hazırlama motivasyonlarının temelinde günlük yaşamda karşılaştıkları problemlere çözüm üretme ve merak duydukları konuları derinlemesine keşfetme isteklerinin yattığını vurgulamaktadır (Blankenburg vd., 2016; Czerniak & Lumpe, 1996; Karaer & Soytürk, 2021; Özbek & Dağyar, 2025). Yerdelen-Damar ve Soyalp (2016) de fen bilimleri içerikli proje yarışmalarına katılan ortaöğretim öğrencilerinin proje konularını belirlerken genellikle kendilerine pratik yarar sağlayacak ve günlük yaşamda sıklıkla karşılaştıkları sorunları giderecek konulara odaklandıkları sonucuna ulaşmışlardır. Ayrıca Eloy, Palmeira Ferraz, Silva Alves ve de Deus Lopes (2023), öğrencilerin bilim ve mühendislik içerikli projelerini içerik bakımından incelemiş ve projelerin ağırlıklı olarak günlük yaşamda karşılaştıkları problemleri çözmeye odaklandıklarını belirtmiştir. Özellikle, bu araştırmada da öğrenciler Teknofest yarışması kapsamında geliştirdikleri projeler ile günlük yaşamda kendilerinin ya da çevrelerindeki diğer kişilerin karşılaştıkları sorunları çözmek, zorlukları gidermek ve merak duygularını tatmin etmek amacıyla ürünler oluşturmuşlardır. Bu durum, öğrencilerin bilimsel meraklarını tatmin etmelerinin yanı sıra, problem çözme becerilerini güçlendirerek yaratıcılıklarını desteklemektedir. Proje geliştirme sürecinde, öğrenciler bir yandan bilimsel yöntemleri uygulama fırsatı bulur diğer taraftan da toplumsal sorumluluk bilincini geliştirerek çevrelerine duyarlı bireyler haline gelirler.

Elde edilen bulgular, proje sürecinin öğrencilere yeni bilgiler öğrenme, tecrübe edinme ve düşünme becerilerinin gelişimi konusunda katkı sağladığını göstermektedir. Bilimsel içerikli proje yarışmaları, öğrencilerin yalnızca teorik bilgi edinmenin ötesinde, bu bilgileri uygulamalı deneyimlerle pekiştirmesine imkân tanır. Blankenburg ve diğerlerinin (2016) çalışmasında,

öğrencilerin bilim yarışmalarına katılmalarının en önemli nedenlerinden birinin yeni bilgiler öğrenme isteği olduğu belirtilmiştir. Alanyazında bu tür yarışmaların, öğrencilere bilgi edinme, yaratıcı ve eleştirel düşünme becerilerini geliştirme fırsatı sunduğu ve onların problem çözmeye yönelik stratejik düşüncelerini teşvik ettiği vurgulanmıştır (Sözer, 2017; Yerdelen-Damar & Soyalp, 2016). Sonuç olarak, bilimsel yarışmalar ve projeler, öğrencilerin yalnızca bilgi öğrenmelerini değil, aynı zamanda bu bilgiyi yaratıcı şekillerde kullanmalarını sağlayabilecek değerli bir eğitim aracıdır.

Bilimsel içerikli proje geliştirme süreci, öğrencilere yeni bilgi ve beceriler kazandırırken, aynı zamanda onları çeşitli güçlüklerle de karşı karşıya bırakmaktadır. Nitekim, bu çalışmada da öğrenciler, proje geliştirme sürecinde üretim, tasarım ve malzeme temini, başvuru ve rapor yazımı aşamalarında çeşitli güçlüklerle karşılaştıklarını belirtmiştir. Öğrencilerin proje geliştirme sürecinde karşılaştıkları temel zorluklardan biri, uygun bir proje konusu bulma ve bu konuyu bilimsel bir soruya dönüştürme yani problemin belirlenmesi ve netlik kazanması sürecidir (Blankenburg vd., 2016; Demirel vd., 2013). Alanyazında da öğrencilerin proje geliştirme sürecinde finansal ve teknik anlamda yetersizliklerle karşılaştıkları, ayrıca araştırma yapma ve rapor yazımında da sıkça güçlük yaşadıkları belirtilmektedir (Demirel vd., 2013; Edelson vd., 1999; Krajcik vd., 1998; Lachebo, Thuo, Labiso & Demissie, 2024a). Özellikle rapor yazımındaki zorlukların, öğrencilerin yeterli araştırma becerisine sahip olmamasından ve yazım teknikleri konusunda deneyim sahibi olmamasından kaynaklandığı düşünülmektedir. Yerdelen-Damar ve Soyalp (2016), bilimsel içerikli projeleri geliştiren öğrencilerin, özellikle düşüncelerini test etmede, model oluşturmada ve gerekli materyallerin temini etmede sorun yaşadıklarını ifade etmiştir. Bu durumun, projenin yürütüldüğü okuldaki maddi imkânların yetersiz olmasından (Sözer, 2017; Lachebo vd., 2024a, 2024b), öğrencilerin ve öğretmenlerin gerekse bilimsel süreçle gerekse proje geliştirme süreciyle ilgili yeterli bilgi ve birikime sahip olmamasından (Lachebo vd., 2024a, 2024b) kaynaklanabileceği ve projelerinin ilerlemesini yavaşlatabileceği düşünülmektedir. Araştırmada öğrencilerin karşılaştıkları bu güçlükleri aşmak için bireysel çalışmalar ve grup çalışmaları yaptıkları, öğretmenlerinden ve ailelerinden destek aldıkları belirlenmiştir. Alanyazındaki çalışmalar da öğrencilerin proje çalışmaları sırasında karşılaştıkları güçlükleri grup çalışmaları, öğretmen rehberliği ve veli desteği ile azalttıklarını vurgulamaktadır (Ayvaci & Çoruhlu, 2010; Demirel vd., 2013; Meydan, 2017). Bowen ve Stelmach (2020) da bilimsel içerikli proje çalışması yürüten öğrencilerin fikir üretme ve geliştirme, malzeme temin etme, bilgi kaynaklarına erişim sağlama, uzmanlarla iletişime geçme, teknik ve finansal destek ile motivasyon sağlama konularında ebeveynlerinden destek aldıklarını vurgulamışlardır. Proje geliştirme, çok yönlü ve kapsamlı bir süreci içeriği için öğrencilerin süreç içerisinde akranlarından, öğretmenlerinden ve ebeveynlerinden destek almalarının onların proje geliştirmeye yönelik motivasyonlarına olumlu yansıtacağı düşünülmektedir.

Araştırmada projelerinde iyileştirme yapmak isteyen öğrencilerin ağırlıklı olarak üründe, kullanılan malzemelerde ve sunumda iyileştirme yapmak istedikleri tespit edilmiştir. Alanyazında proje çalışmalarına katılan öğrencilerin, projelerinde özgün ürünler ortaya koyma isteğinde oldukları ancak; özgün ve yaratıcı bir ürün geliştirme aşamasında gerek bilişsel gerekse donanımsal eksiklikler nedeniyle zorluk yaşadıkları da ifade edilmiştir (Demirel vd., 2013; Lachebo vd., 2024a). Bu durumun ortadan kaldırılmasında öğrencilerin proje çalışmalarını öğretmenleri rehberliğinde yürütmelerinin ve ebeveynlerinden de destek almalarının etkili olacağı düşünülmektedir.

Araştırmaya katılan öğrencilerin tamamı gelecek yıllarda yapılacak olan proje yarışmasına katılmak istediklerini belirtmiştir. Bu durumun nedeni öğrenci görüşlerinde başarılı olma, fikir üretme, kendini geliştirme, öğrenme isteği ve ülkemize katkı sağlama şeklinde vurgulanmıştır. Bu durumun proje yarışmalarının öğrencilerin bilişsel, duyuşsal, sosyal ve psikomotor becerilerinin gelişimi gibi öğrencilere dönük olumlu kazanımlarından kaynaklandığı düşünülmektedir. Walan ve Mc Ewen (2018) bilim ve teknoloji içerikli yarışmaların, öğrencilerin iş birliği yetkinlikleri başta olmak üzere 21. yüzyıl becerilerini önemli ölçüde

geliştirdiklerini, bilim ve teknoloji alanlarına yönelik ilgilerinde belirgin bir artış gözlemlediklerini ve bu durumun ders içerisindeki öğrenme süreçlerine olumlu yönde yansıdığını vurgulamaktadır. Nitekim, bu kazanımların öğrencilerin ilgi ve motivasyon gibi duyuşsal özelliklerini de olumlu yönde etkileyerek ilerleyen süreçlerde yapılacak çalışmalara katılım durumlarına da olumlu yönde yansımaları beklenmektedir.

Öneriler

Araştırma bulguları ve sonuçları temelinde, Teknofest gibi bilimsel içerikli proje yarışmalarının etkililiğini artırmaya ve öğrencilerin deneyimlerini iyileştirmeye yönelik aşağıdaki öneriler sunulmaktadır:

- Öğrencilerin Teknofest gibi yarışmalara katılım nedenleri arasında insanlara faydalı olma, yenilikçi ürünler geliştirme ve kendilerini deneme isteği öne çıkmaktadır. Bu doğrultuda öğrencilerin ürün geliştirme yetilerini ve toplumsal sorunlara yönelik çözüm üretme potansiyelini artırmak amacıyla, çevre sorunları ve sürdürülebilirlik gibi hem bilimi hem de toplumu ilgilendiren konularda proje yarışmalarının sayısının artırılması önerilmektedir.
- Araştırmada öğrencilerin proje geliştirme sürecinde bilgi ve beceri eksikliği yaşadıkları tespit edilmiştir. Bu eksikliklerin giderilmesi adına proje çalışmaları kapsamlı ders dışı faaliyetler ve atölye faaliyetleri gibi öğrencilerin bilimsel içerikli proje geliştirme sürecine yönelik çalışmalar yürütülebilir.
- Öğrencilerin proje yarışmalarına katılım nedenlerinden biri de ödüdür. Bu nedenle Teknofest ve benzer içerikli projeler yarışmalarında ödül ve teşvik mekanizmalarının çeşitlendirilmesi önerilmektedir. Bu durum, öğrencilerin bu ve benzer etkinliklere katılımına yönelik ilgi ve motivasyonlarını olumlu yönde etkileyebilir.
- Öğrencilerin proje fikirlerini günlük yaşamda karşılaştıkları güçlüklerle pratik çözümler üretme ve insanların ihtiyaçlarını karşılama üzerine kurdukları göz önüne alındığında, bu tür yarışmaların daha geniş kapsamda yürütülmesi ve çeşitli temalarla desteklenmesi önerilmektedir. Bu durumun, öğrencilerin yaratıcılıklarını ve problem çözme becerilerini farklı alanlarda kullanmalarına katkı sağlayacağı düşünülmektedir.
- Araştırma, öğrencilerin proje süreçlerinde karşılaştıkları zorlukları aşmada danışman öğretmenlerinden destek aldıklarını ortaya koymaktadır. Ancak, alanyazında öğretmen rehberliği eksikliği ve öğretmenlerin içerik geliştirme ve pedagojik yeterliliklerindeki eksiklikler dile getirilmektedir. Bu bağlamda, öğretmenlerin proje geliştirme ve yönetme becerilerini artıracak, içerik ve pedagojik yeterliliklerini zenginleştirecek eğitimlerin yaygınlaştırılması büyük önem taşımaktadır. Bu eğitimler, öğretmenlerin öğrencilerin proje süreçlerinde karşılaşılabilecekleri bilişsel ve donanımsal eksikliklerin giderilmesine yönelik daha nitelikli ve etkin destek sağlamasına yardımcı olabilir.
- Öğrencilerin proje sürecinde karşılaştıkları zorlukları aşmada ebeveynlerinden önemli destek aldıkları belirlenmiştir. Bu destek ağının daha da güçlendirilmesi amacıyla, ebeveynlere proje yarışmalarının öğrenci gelişimine katkıları, proje süreci ve ebeveynlerin bu süreçte nasıl destek olabileceklerine dair bilgilendirici seminerler ve atölyeler düzenlenmesi önerilmektedir.
- Araştırmada öğrencilerin karşılaştıkları güçlükleri akranları aracılığıyla aştıkları saptanmıştır. Bu sonuçtan hareketle öğrencilerin yürütecekleri projelerde grup çalışmalarına yer verilmesinin ve proje çalışmalarının gruplar halinde gerçekleştirilmesinin yararlı olacağı düşünülmektedir.
- Öğrencilerin proje geliştirme sürecin üretim, tasarım ve malzeme temini ile başvuru ve rapor yazımı gibi aşamalarda güçlükler yaşadığı tespit edilmiştir. Bu zorlukların üstesinden

gelmek için, öğretmen ve öğrencilere yönelik proje geliştirme eğitimlerinin içerikleri zenginleştirilmeli ve pedagojik yeterlilikler artırılmalıdır. Öğrencilerin bilimsel araştırma ve rapor yazma becerilerini geliştirecek destekleyici mekanizmalar kurulmalıdır.

- Öğrenciler, proje geliştirme sürecinde özellikle tasarım/ürün oluşturma, malzeme temini ve başvuru aşamalarında önemli güçlükler yaşadıklarını belirtmişlerdir. Bu zorlukların giderilmesi amacıyla, okullara ve öğrencilere yönelik kurumsal bütçe ayrılması, malzeme temini ve teknik ekipman desteği konularında kalıcı çözümler üretilmesi ve ilgili kurum ve kuruluşlarla iş birliğinin artırılması önerilmektedir.
- Araştırma, öğrencilerin önemli bir kısmının hakem dönütlerinin beklentilerini tam olarak karşılamadığını veya kısmen karşıladığını göstermektedir. Bu durum, öğrencilerin projelerini geliştirme konusundaki motivasyonlarını etkileyebilir. Bu nedenle, hakem değerlendirme süreçlerinde daha şeffaf kriterler belirlenmesi, öğrencilere projelerini iyileştirmelerine yönelik somut ve yapıcı geri bildirimlerin sağlanması öneriler arasındadır.
- Araştırmaya katılan tüm öğrencilerin Teknofest gibi yarışmalara yeniden katılma isteği ve bu isteklerinin temelinde başarılı olma, fikir üretme, kendini geliştirme, yeni bilgiler öğrenme ve ülkeye katkı sağlama gibi motivasyonların bulunması, bu tür yarışmaların öğrencilerin duyuşsal özelliklerini olumlu yönde etkilediğini göstermektedir. Bu olumlu etkiyi artırmak ve daha fazla öğrenciyi bilim ve teknolojiye yönlendirmek amacıyla, yarışmaların medya desteği ve görünürlüğünün artırılması önerilmektedir.
- Projelerin ulusal ve uluslararası düzeyde daha fazla tanıtılması, öğrencilerin bilimsel yeteneklerini sergileyebileceği ortamların çoğaltılması ve başarılı projelerin hayata geçirilmesi için gerekli iş birliği gibi mekanizmalarının oluşturulması, öğrencilerin çabalarının somut sonuçlara dönüşmesine imkân sağlayabilir.
- Araştırmada proje geliştirme süreci ortaokul öğrencileri açısından ve Teknofest proje yarışmaları açısından ele alınmıştır. Bu nedenle Teknofest proje yarışması sürecinin farklı düzeydeki katılımcılara yansımalarının neler olduğunun detaylı olarak ele alınması için farklı örneklerle çalışılması ve karma yöntemler araştırmalarının yürütülmesi önerilmektedir. Benzer içerikli proje yarışmalarının öğrencilere yansımalarının neler olabileceği konusunda çalışmalar da yürütülebilir.

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Middle School Students' Project Competition Experiences: The Case of Teknofest¹

Ragıp ÇAVUŞ²

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Abstract

Scientific and technological competencies play a crucial role in developing 21st-century skills and fostering sustainable development. The enhancement of students' scientific and technological competencies depends not only on in-school activities but also on extracurricular activities, such as science project competitions. In this context, this study aims to comprehensively examine the project competition experiences of middle school students who participated in the Teknofest Aerospace and Technology Festival. The study, conducted using a phenomenological approach within qualitative research, included 13 students from a middle school in a metropolitan district of the Marmara Region. Data were collected through semi-structured focus group interviews and analyzed using content analysis. The findings indicate that students' motivations for participating in the competition were primarily driven by a desire to contribute to humanity, develop innovative products, and challenge themselves. Although students encountered difficulties during various stages of project development -such as production, design, and report writing- they reported overcoming these challenges with the support of their teachers, families, and peers. The results reveal that engaging in science project competitions positively impacts students' cognitive, affective, and social skills. Participation contributes to the development of problem-solving, creativity, and collaboration competencies, while also fostering future involvement in scientific endeavors. In light of these findings, it is recommended that the scope of project competitions be expanded, technical and financial support mechanisms be strengthened, and training on both competition processes and project development be made more widely available to help students sustain their motivation and minimize the challenges they face.

Keywords: Middle school students, student experiences, project competitions, Teknofest

INTRODUCTION

In the 21st century, marked by increasing global competition, science and technology have emerged as fundamental drivers of economic growth, social welfare, and sustainable development, particularly in developing countries. Within this context, fostering young people's interest in science and technology, and engaging them in creative thinking and problem-solving processes from an early age, is of critical importance. Ensuring that students are not only recipients of knowledge but also capable of applying it effectively to solve real-world problems constitutes a central goal of modern educational reforms and innovative pedagogical approaches (Hattie, 2015). Consequently, developing students' scientific literacy, fostering positive attitudes toward science, and enhancing their career aspirations have become essential educational objectives. Science education responds to this need by offering a dynamic process that cultivates students' scientific thinking and problem-solving skills. Notably, project-based learning (PBL) and STEM (Science, Technology, Engineering, and Mathematics)-oriented approaches stand out among innovative educational practices that support this dynamic learning process.

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²Dr., Ministry of National Education, Kocaeli-Türkiye, ragipcavus@hotmail.com, orcid.org/0000-0003-3449-5729

Project-based learning provides a robust framework that enables students to develop solutions to real-life problems and apply acquired knowledge in practical contexts (Abdul Aziz, 2019; Bell, 2010; Choiriyah, Perdana Sriyansyah & Ponco Sumanto, 2024). This approach plays a critical role in promoting active participation in the process of acquiring scientific knowledge, thereby facilitating deeper and more enduring learning experiences (Xu & Zhang, 2024). Evidence from the literature indicates that PBL helps students connect with real-world contexts and contributes to the development of scientific literacy (Hindun, Nurwidodo, Wahyuni & Fauziah, 2024; Rivet, 2003). Prior research demonstrates that PBL not only provides students with opportunities to produce tangible outcomes but also enhances academic achievement, motivation, attitudes toward science, scientific process skills, critical thinking, and other 21st-century competencies (Bell, 2010; Blankenburg, Höffler, Peters & Parchmann, 2016; Borysova, Usenko & Ihnatenko, 2023; Can & Gerşil, 2021; Thomas, 2000; Uysal, 2021; Zhang & Ma, 2023).

Another contemporary educational approach closely linked to PBL is STEM education, which requires students to apply knowledge and skills from science, technology, engineering, and mathematics disciplines to solve real-world problems. It serves as a vital mechanism for fostering 21st-century competencies (Choiriyah et al., 2024). Considering the benefits of both PBL and STEM education, contemporary instructional practices increasingly integrate project-based STEM teaching. Such integration allows students to experience theoretical knowledge in practical contexts, thereby enhancing academic achievement while simultaneously strengthening interdisciplinary connections, scientific thinking, problem-solving abilities, interest in STEM fields, and career orientations (Tanır & Türkmen, 2024).

Science project competitions constitute one of the primary practices through which students are introduced to PBL and STEM approaches. These competitions, embodying the principles of both, serve as powerful platforms that promote scientific thinking, social and emotional development, and active engagement in learning beyond formal school settings. By contributing to society's scientific literacy (Wu & Hsu, 2024), they encourage students to transform abstract scientific knowledge into tangible products and solutions, thereby enriching their learning experiences. National and international competitions offer students opportunities to work individually or collaboratively, enhancing their social skills (Blumenfeld, Soloway, Marx, Krajcik, Guzdial & Palincsar, 1991). In particular, STEM-focused competitions aim to strengthen creativity and problem-solving abilities by enabling students to develop evidence-based products. These competitions, grounded in PBL, support enduring learning, the application of theoretical knowledge to real-world challenges, the integration of technology and science, and the development of scientific process skills as well as positive attitudes toward science (Amri, 2012; Barron & Darling-Hammond, 2008). In Turkey, national competitions such as TÜBİTAK's research project contests for secondary and high school students, and Teknofest, organized by the T3 Foundation for participants ranging from primary school students to adults, represent prominent examples of such initiatives.

The Teknofest Aerospace and Technology Festival is one of the largest science and technology events organized in line with Turkey's national technology initiative. Aiming to introduce younger generations to science and technology, the event not only focuses on advanced technology projects but also hosts competitions in various categories, including those open to elementary school students, thereby fostering scientific interest from an early age (Teknofest, 2023). Teknofest competitions are designed to provide students with opportunities to explore scientific thinking processes and develop tangible projects while also strengthening Turkey's future infrastructure in science and technology. Such competitions allow students to present and showcase their scientific projects at both national and international levels, while simultaneously contributing to the development of their research skills, critical thinking, teamwork, and presentation abilities. Blankenburg et al. (2016) note that participation in scientific competitions increases students' interest in fields such as science and mathematics, and that this effect endures long after the competition. These findings demonstrate the effectiveness of competitions such as Teknofest in enhancing students' scientific motivation.

Meydan (2017) emphasizes that participation in scientific project competitions organized by TÜBİTAK plays a significant role in fostering students' scientific perspectives and developing their skills in scientific thinking, problem-solving, and self-efficacy. Similarly, Andrieiev and Andrieieva (2024) show that STEM projects are effective in enhancing students' life skills, such as entrepreneurship and responsibility-taking. In this context, scientific project competitions not only equip students with academic competencies but also provide a rich learning environment that nurtures them as innovative and entrepreneurial individuals with both personal and social responsibilities (Campbell, Wagner & Walberg, 2002; Sharaabi-Naor, Kesner & Shwartz, 2014).

Participation in project competitions constitutes a critical milestone in students' educational trajectories. Students engaged in these activities gain cognitive skills -such as problem-solving, analytical thinking, creative product development, and critical reasoning- through direct experience with scientific processes (Krajcik & Blumenfeld, 2006). These gains contribute not only to cognitive development but also to affective growth (e.g., self-confidence, collaboration, responsibility) and psychomotor growth (e.g., practical application). Furthermore, such competitions foster interdisciplinary thinking, enabling students to understand the relationship between science and technology and to generate novel products or solutions based on this understanding (Erduran, 2014). Collectively, these findings indicate that scientific project competitions significantly contribute to students' academic, social, and personal development.

Scientific project competitions not only stimulate students' scientific curiosity but also foster social awareness. In attempting to solve problems encountered during their projects, students develop a sense of social responsibility and the capacity to generate solutions that benefit society (Lave & Wenger, 1991). Particularly in engineering- and technology-oriented projects, students gain experience in addressing social problems through interdisciplinary collaboration (High, Hammack, Watt, Thomas, Redmond, Jordan & Dockers, 2009; Čović, Šimon, Fürstner & Pataki, 2024). These competitions, beyond promoting individual achievements, also strengthen students' abilities to contribute to humanity and the environment, while cultivating a strong sense of responsibility (Brophy, 2006).

Participation in STEM competitions provides students with access to STEM resources, knowledge, and skills, as well as fostering positive attitudes toward STEM (Jiang, Zhang & Lv, 2022). Integrating STEM projects and competitions into the education system helps students enhance their interdisciplinary thinking skills and global competitiveness (Nikitina & Ishchenko, 2023). This integration not only enables students to gain in-depth knowledge in STEM fields but also significantly influences their career planning. In particular, such competitions can support students' professional development in a sustainable way, thereby laying a strong foundation for their future career trajectories. Indeed, the literature emphasizes that active participation in STEM-related project competitions positively affects students' interest in STEM careers (High et al., 2009; Miller, Sonnert & Sadler, 2018). Students who participate in these competitions not only improve their technical skills but also develop lifelong learning habits, becoming individuals who continually renew themselves (Papert, 2020). With the support of mentor teachers and families, students gain opportunities to design more effective and original projects while simultaneously enhancing their collaboration and problem-solving skills to overcome challenges (Mitchell, Foulger & Wetzel, 2009).

Although scientific project competitions promote students' scientific curiosity, enhance academic achievement, and foster lifelong scientific thinking, both students and teachers often encounter various challenges during the process. The literature highlights the importance of teacher guidance in project development and emphasizes the need for improvements in planning and mentoring, as well as the expansion of teacher training programs (Özel & Akyol, 2016; Meydan, 2017). Similarly, Tonbul and Ata Çiğdem (2024) report deficiencies in teacher and student competencies regarding project development, while Xu and Zhang (2024) identify gaps in teachers' content knowledge and pedagogical skills. Lachebo, Thuo, Demissie, and Labiso (2024b) further argue that although teachers show interest in scientific project competitions, their limited

knowledge of research processes and mentorship reduces their ability to guide students, weakens their encouragement of participation, and negatively affects student preparation and engagement.

Other challenges include financial constraints, insufficient materials, and limited technical equipment (Demirel, Baydaş, Yılmaz & Goktaş, 2013; Edelson, Gordin & Pea, 1999; Krajcik, Soloway, Blumenfeld & Marx, 1998; Meydan, 2017; Pinar, 2025). Additionally, the exam-oriented structure of educational systems, the misalignment of project processes with these systems, and the limited effectiveness of existing project writing and management training programs constitute further obstacles to the implementation of science project competitions (Pinar, 2025; Tonbul & Ata Çiğdem, 2024). Proposed solutions in the literature include revising curricula, allocating institutional budgets for such competitions, fostering collaborations with relevant organizations, and enriching student and teacher training programs on project development (Meydan, 2017; Pinar, 2025; Tonbul & Ata Çiğdem, 2024; Xu & Zhang, 2024). Enhancing media support and increasing awards are also recommended to improve the visibility and effectiveness of these competitions. Kaykobad (2024) argues that scientists and engineers are insufficiently recognized in society; thus, scientific competitions should receive greater visibility. Such events provide platforms for students to showcase their scientific abilities, promote public appreciation of science, and contribute significantly to science education. Moreover, these competitions strongly motivate students to develop skills in scientific processes, engineering design, and 21st-century competencies, as well as to pursue STEM careers.

Within this framework, science project competitions are expected to serve as powerful tools in science education, offering significant opportunities for students to acquire in-depth knowledge and skills. Accordingly, this study aims to address gaps in the literature regarding the effects of science project competitions on science education. Although the current literature emphasizes that PBL and STEM education foster students' problem-solving, research, decision-making, and innovative thinking skills while supporting scientific literacy (Abdul Aziz, 2019; Choiriyah et al., 2024; Thomas, 2000), comprehensive studies examining the cognitive, social, and affective impacts of nationally distinctive events such as Teknofest -prominent within Turkey's national technology initiative- on middle school students remain limited. Moreover, challenges in science project development, including insufficient teacher guidance, financial difficulties, and incompatibility with an exam-oriented education system (Demirel et al., 2013; Edelson et al., 1999; Meydan, 2017; Pinar, 2025; Tonbul & Ata Çiğdem, 2024), have not been sufficiently explored in terms of how they are experienced from students' perspectives within the Teknofest context, nor how students attempt to overcome them. This research seeks to contribute to the literature by addressing students' sources of motivation and examining, from a holistic perspective, the multidimensional contributions of project competitions not only to students' cognitive gains but also to their social, affective, and psychomotor development -such as self-confidence, collaboration, and responsibility- as well as to their development of societal awareness.

Overall, this study investigates the effects of science project competitions on science education, with a specific focus on Teknofest, which has seen a growing number of applications each year. It explores the role of these competitions in fostering students' skill development. The research focuses on the project competition experiences of middle school students participating in Teknofest and analyzes how these competitions contribute to their cognitive, social, and affective development. Additionally, the study examines the challenges students face, the strategies they employ to cope with these challenges, and the types of support they receive throughout the project process. The findings are expected to provide valuable insights into the experiences gained through science project competitions, how these experiences shape students' interest in science and technology, and how the skills they acquire influence their future educational and career trajectories. In the long term, the results are anticipated to contribute to the integration of science project competitions into teaching and learning processes, encourage greater participation of young people in such events, and ultimately support societal development.

Purpose of the Study

The purpose of this study is to conduct an in-depth examination of middle school students' experiences during project competitions in Teknofest. Accordingly, the research problem is framed around the following central question: *"What are the perceptions of middle school students participating in Teknofest project competitions regarding the project development process?"*

Within this scope, the study focuses on students' perspectives concerning the following sub-questions:

- What are the reasons for students' participation in the project competition?
- What motivates students to develop their project ideas?
- What are students' views on the contributions of the project development process?
- What challenges do students encounter during the project development process?
- How do students address and overcome these challenges?
- How do students perceive the adequacy of feedback received from reviewers?
- What are students' views regarding the improvement of their projects?
- What are students' intentions and motivations to participate in the competition again?

Through these questions, the study aims to comprehensively reveal the multiple dimensions of middle school students' experiences in Teknofest project competitions, providing a holistic understanding of their engagement, learning processes, and developmental outcomes.

METHOD

Research Design

This study was conducted using the phenomenological research design, which is one of the qualitative research approaches. Phenomenology focuses on phenomena that are experienced but not yet fully understood in depth, aiming to reveal individuals' perceptions regarding specific experiences (Holstein & Gubrium, 1994; Yıldırım & Şimşek, 2021). Yin (2016) also emphasizes that phenomenological research enables the interpretive analysis of lived experiences. The primary rationale for adopting this design in the present study was to explore middle school students' experiences in Teknofest project competitions from their own subjective perspectives. The phenomenological approach allows for the identification of shared experiences among participants, providing insight into how they perceive the process, the challenges they encounter, and the contributions they gain, all expressed in their own words (Moustakas, 1994). Accordingly, this study aims to explore the diverse and in-depth aspects of students' Teknofest experiences, offering a comprehensive examination of the effects of scientific project competitions on participants.

Study Group

The study group of this research consisted of 13 students selected from a middle school located in the district center of a metropolitan city in the Marmara Region during the 2022–2023 academic year. The participants were determined using criterion sampling, one of the purposive sampling strategies commonly employed in qualitative research, which allows the researcher to select information-rich cases based on specific criteria (Patton, 2002; Yıldırım & Şimşek, 2021). The primary criterion for inclusion in the study was that students had actively and voluntarily participated in project work outside of school hours by submitting a project application for Teknofest. This criterion ensured that in-depth data could be obtained from students who had directly experienced the Teknofest project processes, aligning with the research objectives.

In qualitative research, sample size is guided by the principle of data saturation, which occurs when no new themes or information emerge from the collected data (Charmaz, 2014). Literature indicates that for studies of similar scope, 10–20 participants are generally sufficient to achieve

data saturation (Guest, Bunce & Johnson, 2006). In the present study, interviews conducted with 13 students provided sufficient depth regarding the main themes and participants' experiences related to the Teknofest project process, thus ensuring data saturation. Consequently, the data obtained from these 13 students are considered adequate to meet the research objectives and to present a comprehensive view of the phenomenon.

The demographic characteristics of the students included in the study group are presented in Table 1.

Table 1. Demographic Characteristics of the Students in the Study Group

Variable		n (Frequency)
Gender	Female	2
	Male	11
Grade level	5 th grade	2
	6 th grade	2
	7 th grade	7
	8 th grade	2
Project category	Educational technologies	5
	Technology for humanity	8
Project team	Individual	5
	Group	8
Total		13

An examination of the students' demographic characteristics presented in Table 1 indicates that the study group was predominantly composed of male students (n= 11) and mostly seventh-grade students (n= 7). Additionally, it was observed that the majority of students focused on projects within the "technology for humanity" category (n= 8) and participated in collaborative, group-based project work (n= 8).

Data Collection Tools

Within the scope of the study, students' views were collected through semi-structured focus group interviews. Accordingly, a semi-structured interview guide was developed to gather in-depth information. The interview guide included questions designed to elicit students' perspectives on the following aspects:

- Reasons for participating in the competition,
- How they developed their project ideas,
- Contributions of the project development process,
- Challenges encountered during the project process,
- Strategies employed to overcome these challenges,
- The extent to which feedback from reviewers met their expectations,
- Project improvement processes, and
- Intentions and motivations to participate in the competition again.

The draft interview guide was reviewed by two experts in the field of science education and was subsequently evaluated for clarity and comprehensibility through pilot discussions with two students who had prior experience in project competitions. Based on this feedback, the final version of the interview guide was established.

Data Collection Process

The data for this study were collected during the second semester of the 2022–2023 academic year. Initially, students were provided with information regarding the content and scope of the Teknofest project competition. Subsequently, students who expressed interest in participating

were guided through the steps of the project development process outside of school hours, allowing them to create their projects. During this process, project development activities were conducted with nine student groups focusing on educational technologies and technologies for humanity within the middle school category of Teknofest. Following the completion of their projects, students prepared preliminary project evaluation reports and submitted their projects for competition entry. For projects that successfully passed the initial screening, necessary improvements and updates were made based on reviewers' feedback, and detailed project reports were prepared and uploaded to the system for the second-stage evaluation.

Prior to data collection, the necessary permissions were obtained from the school administration, where the study was conducted, with the involvement of the students' project advisors. Additionally, voluntary participation forms were obtained from students, and parental consent forms were collected to ensure that all project development activities and data collection procedures conducted outside school hours adhered to ethical guidelines. Throughout the research process, strict confidentiality principles were observed, and all data were analyzed collectively for scientific purposes while safeguarding personal information.

The study data were obtained from 13 students who actively participated in the project process and voluntarily agreed to contribute to the research. Data collection was conducted through semi-structured focus group interviews after the completion of the project development and competition process. The interviews were held at times convenient for the students, organized by project groups, and lasted approximately 30 minutes per group. During the interviews, students were informed that the information they provided would be analyzed collectively for scientific purposes and that their personal data would remain fully confidential. All data obtained from the interviews were documented in written form.

Data Analysis

The research data were analyzed using content analysis, a method aimed at revealing concepts and relationships that clarify the collected data. This process facilitates in-depth processing of raw data and allows for the discovery of new concepts and themes (Neuman, 2014; Yıldırım & Şimşek, 2021). MAXQDA 2020 software was utilized for data analysis and the visualization of findings.

In this study, the coding and theme development processes were conducted by a single researcher. This approach was selected based on the researcher's expertise and experience in the Teknofest project competition process and qualitative research methods. To minimize potential subjectivity associated with using a single coder and to ensure the reliability and validity of the study, various strategies were rigorously implemented.

The entire analysis process -including data collection, coding, thematization, and interpretation of findings- was conducted in a detailed and transparent manner. Upon completion of the analyses, the resulting codes, themes, and findings were shared with an expert in science education for feedback. This peer review process allowed the researcher to critically examine potential biases, evaluate the consistency of the analyses with the data from an external perspective, and confirm the comprehensiveness of the findings, thereby significantly contributing to the study's credibility and trustworthiness (Creswell & Poth, 2018).

In presenting the findings, rich and direct quotes from students were extensively included. This strategy enables readers to observe the connection between the researcher's interpretations and participants' original statements, enhancing the credibility of the findings (Miles, Huberman, & Saldaña, 2018). Student quotations are presented using codes such as S1, S2, ... S13.

Furthermore, the findings are not only presented through emergent themes but are also supported by detailed descriptions that contextualize the students' experiences. This in-depth explanation allows readers to assess the extent to which the findings can be transferred to other contexts, thereby enhancing the study's transferability (Creswell & Poth, 2018).

For the presentation of data, code maps and graphics were generated using MAXQDA 2020. These visuals include the codes and lines indicating the frequency of each code. The thickness of each

line represents the relative frequency with which the corresponding code was emphasized in the data.

FINDINGS

The findings obtained from the study are presented under appropriate subheadings developed in accordance with the interview questions. The results are organized based on students' reasons for participating in the competition, motivations for developing their project ideas, perceived contributions of the project process, challenges encountered during the project and strategies for overcoming them, the extent to which reviewer feedback met expectations, project improvement processes, and students' willingness to participate in the competition again.

Findings on the Reasons for Participation in the Project Competition

Within the scope of the study, students' motivations for participating in the project competition were first examined. The findings obtained from the semi-structured interviews regarding students' reasons for participation are presented in Figure 1.

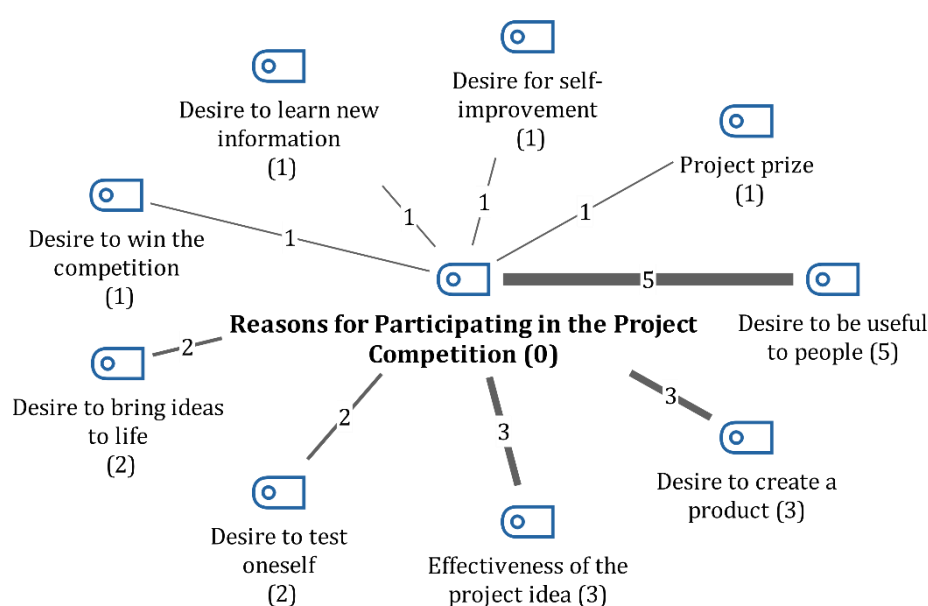


Figure 1. Students' Perspectives on Reasons for Participating in the Project Competition

An examination of the findings in Figure 1, which reflect students' perspectives on their reasons for participation, indicates that the primary motivations were identified as "contributing to society," "desire to create a product," and "effectiveness of the project idea." These motivations align with the characteristic of scientific project competitions as a powerful tool supporting not only students' scientific process skills but also their social and emotional development.

For instance, the response of student coded S7, "*To present the project we made to everyone and have it developed for the benefit of the country...*" exemplifies both the "contributing to society" and "desire to create a product" codes. Similarly, the statement of student S8, "*To provide technology beneficial to our country...*" emphasizes the motivation of "contributing to society." These findings suggest that students' efforts to solve problems through their projects foster a sense of social responsibility and enable them to produce solutions that contribute to society.

Students also indicated that they participated in competitions like Teknofest due to the "desire to challenge oneself" and the "desire to realize their ideas." For example, student S11 expressed "*Participating in such competitions allows me to challenge myself.*" reflecting the "desire to challenge oneself," while student S13 stated "*To bring our ideas to life...*" illustrating the "desire to realize ideas." This finding highlights that students acquire skills such as problem-solving, analytical thinking, and creative product development by experiencing scientific processes.

Overall, scientific project competitions like Teknofest provide students with opportunities to explore scientific thinking processes and develop tangible projects.

Although less frequently, students also mentioned factors such as the “desire to learn new knowledge,” “desire for self-improvement,” “desire to win the competition,” and “project awards” as motivations for participation. For instance, student S1’s statement, “*To improve myself in areas such as software and learn from my mistakes.*” reflects the codes “desire for self-improvement” and “desire to learn new knowledge.” These findings correspond with benefits such as enhancing academic achievement, better understanding scientific processes, developing critical thinking skills, and engaging in research. Moreover, incentives such as monetary awards were identified as significant factors encouraging participation in applied project competitions.

Overall, an analysis of the reasons for students’ participation in the project competition indicates that expressions related to contributing to society, product creation, generating effective ideas, realizing ideas, and learning new knowledge were prevalent in students’ responses. This demonstrates that students’ motivations for participating in the Teknofest project competition are consistent with the objectives of the competition.

Findings on the Reasons for Developing Project Ideas

Within the scope of the study, students’ approaches to developing their project ideas were investigated. The findings obtained are presented in Figure 2.

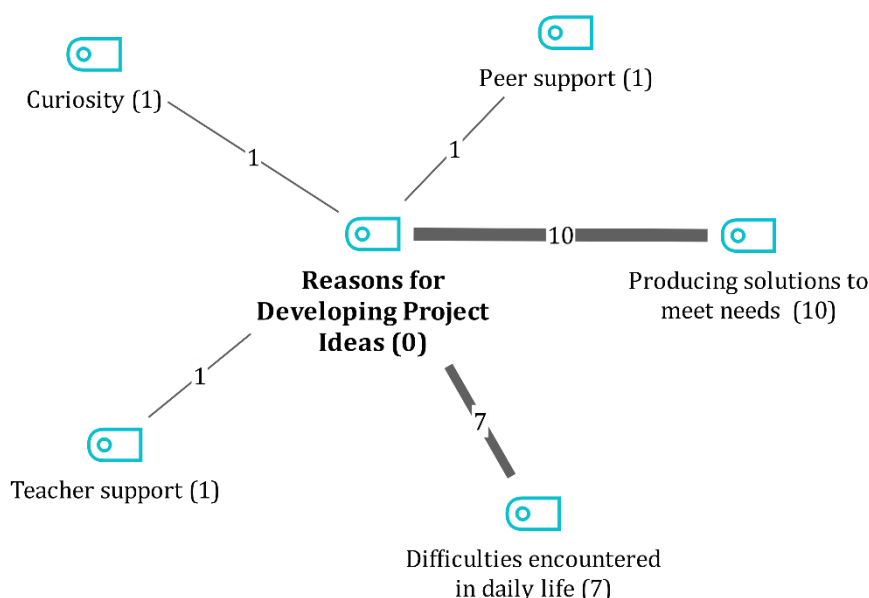


Figure 2. Students’ Perspectives on Project Idea Development

An examination of the findings in Figure 2 indicates that students primarily generated their project ideas based on a desire to address human needs and to solve challenges encountered in daily life. For example, student S5 stated, “*During hot summers, everyone wants something cold. Even if we take cold water from home, it warms up after a while. Therefore, we designed a mini refrigerator.*” while student S8 noted, “*We started from the problem of snowfall in our country and decided to produce a solution for it.*” These statements exemplify the motivations of responding to everyday problems and societal needs. Some students highlighted alternative motivations for idea development. For instance, student S1 mentioned, “*With the approval and advice of our teacher...*” indicating that the project idea was shaped with the guidance of a mentor. Similarly, student S13 stated, “*While talking with my friends, we considered what kind of project we could produce.*” emphasizing collaborative idea generation. Additionally, student S9 noted, “*It was a topic I was curious about and would be useful for people.*” suggesting that personal curiosity also influenced the development process.

Overall, the findings suggest that students' project ideas are largely grounded in generating practical solutions to real-life challenges and addressing human needs. This tendency aligns with the overarching objectives that Teknofest project competitions aim to foster among participants.

Findings on the Contributions of the Project Development Process

The study also examined students' perspectives on the contributions of the project development process. The findings derived from semi-structured interviews are presented in Figure 3.

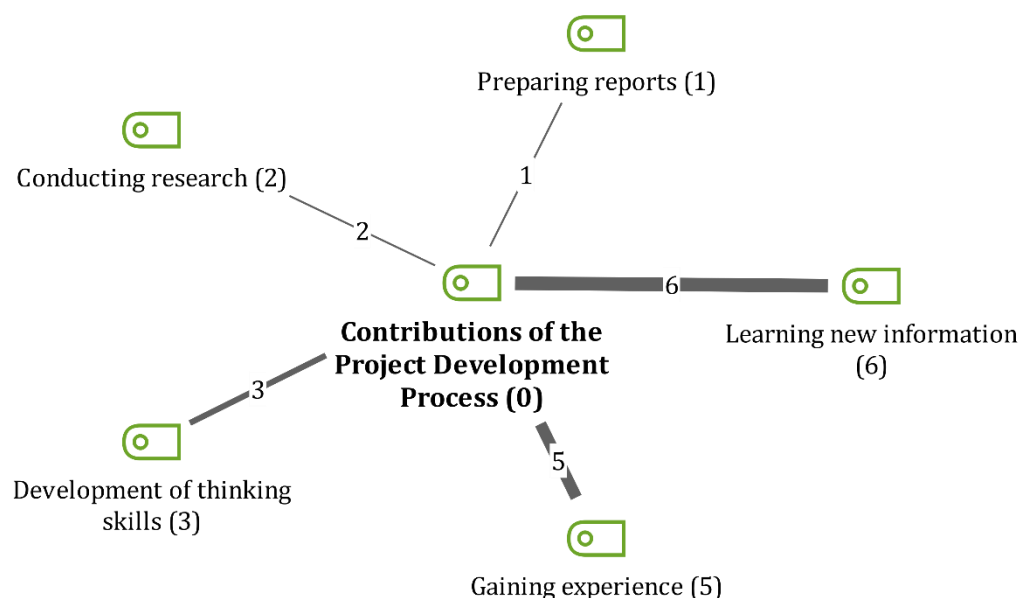


Figure 3. Students' Perspectives on the Contributions of the Project Development Process

The results presented in Figure 3 indicate that the project development process significantly contributed to students' cognitive skills and experiential learning. Specifically, the process enhanced students' acquisition of new knowledge, experiential learning, and development of thinking abilities. For example, student S7 stated, *"It contributed a lot. Here is how: I gained more knowledge about the components. At least I developed an idea and my thinking improved."* illustrating these gains. Students also reported that they developed competencies in scientific research and academic reporting. Student S5 noted, *"Yes. I learned unknown information by conducting research online."* reflecting active knowledge acquisition, while S4 emphasized, *"Of course... For instance, I think it contributed to my ability to write reports."* highlighting improvements in academic reporting skills. These outcomes correspond with the expected learning achievements of Teknofest project competitions.

Findings on the Challenges Encountered in the Project Development Process

Students' perspectives regarding the challenges faced during the project process were also analyzed in detail. The findings are presented in Figure 4.

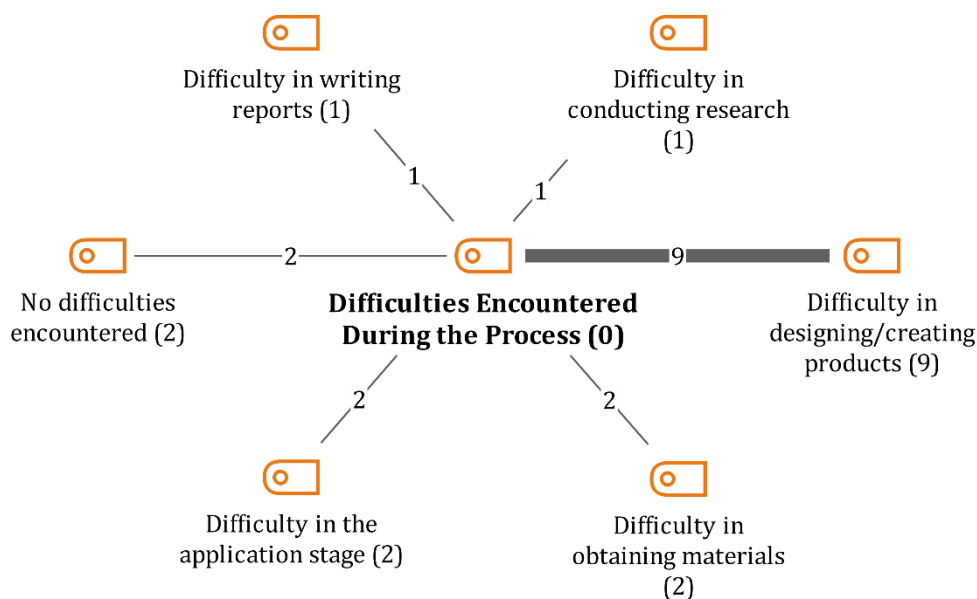


Figure 4. Students' Perspectives on Challenges Encountered During the Project Process

The findings in Figure 4 demonstrate that students faced a variety of challenges throughout the Teknofest project process. Responses indicate that difficulties were most prevalent in design and product development, material acquisition, and the competition application stages. For example, student S7 stated, "Yes, in the process of finding parts. Also, there were errors in printing the outer mold of the model." corresponding to the codes "difficulty in design/product creation" and "difficulty in material acquisition." Similarly, student S2 remarked, "Yes. Our project almost could not be registered." highlighting challenges during the application phase. In addition, students indicated difficulties during the research and report writing stages. For instance, S11 noted, "I struggled while conducting research." reflecting challenges in the research process, and S6 stated, "It was difficult because we tried to write the report very well." indicating reporting-related challenges. In contrast, students S4 and S13 reported that they did not encounter any significant difficulties during the project process. Overall, these findings suggest that students generally experienced the most challenges when translating their ideas into tangible products.

Findings on Overcoming the Challenges Experienced During the Project Process

Another research question addressed in the study concerns how students overcame the challenges encountered during the project process. The findings derived from the interviews are presented in Figure 5.

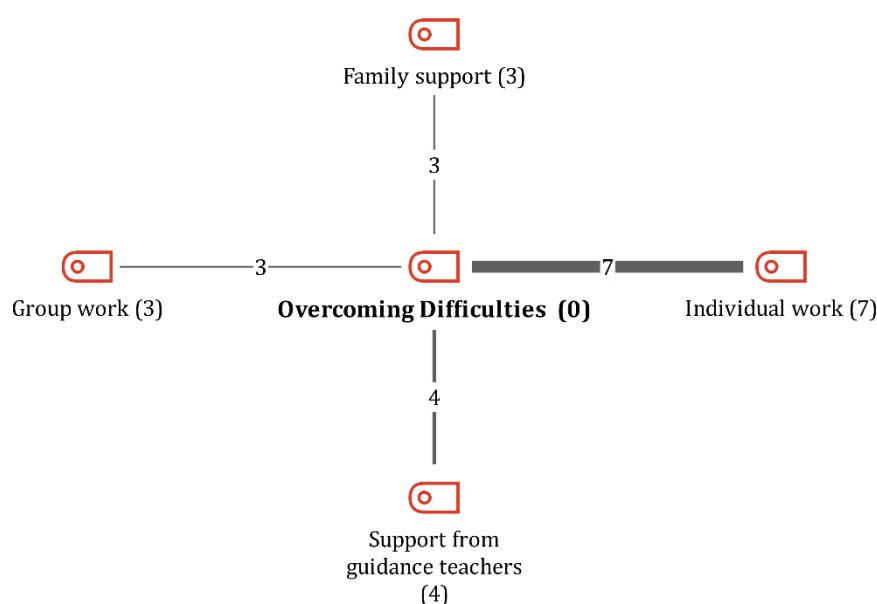


Figure 5. Students' Perspectives on Overcoming Challenges

The findings in Figure 5 indicate that students primarily overcame challenges through individual efforts. For instance, student S3 stated, *"I worked harder."* and S10 noted, *"I tried to acquire information."* exemplifying this approach. In addition to individual strategies, students reported seeking support from their mentor teachers and family members to overcome difficulties. S12 remarked, *"I received support from my teacher and family."* which corresponds to the codes "mentor support" and "family support." Students also emphasized collaborative problem-solving, as illustrated by S7's statement, *"I worked more with my group partner."* reflecting the role of teamwork in overcoming challenges. These findings suggest that individual effort, collaborative work, and support from mentors and parents collectively contribute to students' ability to navigate obstacles during the project process.

Findings on the Extent to Which Reviewer Feedback Met Expectations

Students' perceptions of the adequacy of reviewer feedback were also examined. The findings regarding the extent to which reviewer feedback met students' expectations are presented in Figure 6.

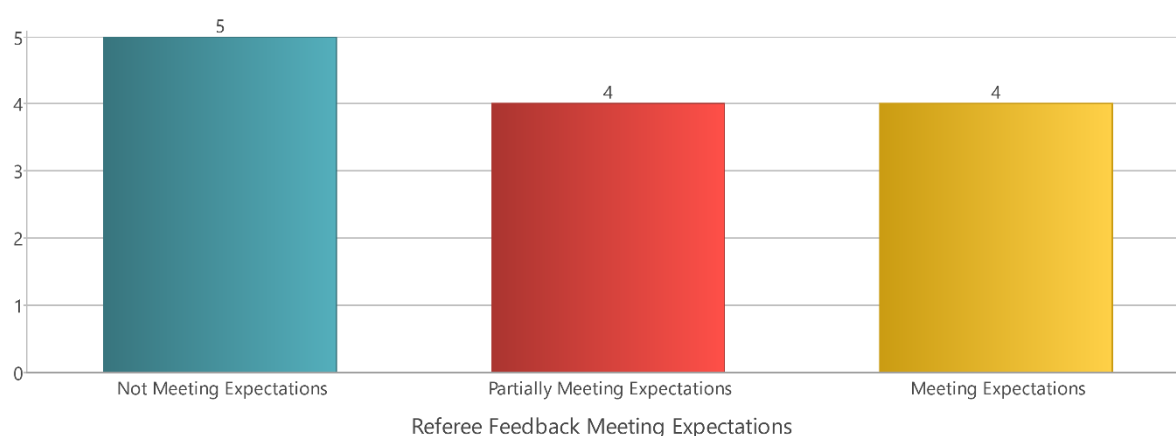


Figure 6. Students' Perspectives on Reviewer Feedback Meeting Expectations

As shown in Figure 6, five students indicated that reviewer feedback did not meet their expectations, while four students reported that feedback only partially met their expectations. For example, S12 stated, *"No, it does not meet expectations. It upset me that our work was not accepted despite our efforts."* reflecting unmet expectations. S9 noted, *"Sometimes it met expectations, sometimes it did not."* which was coded as "partially met expectations." Conversely, four students

expressed that reviewer feedback adequately met their expectations. For instance, S5 remarked, *"Our expectation was to pass the threshold. We came close, but it didn't happen. Still, I cannot blame the reviewers. I don't think there was any reviewer error."* indicating satisfaction with the feedback provided.

Findings on the Improvement of the Projects

Students' perspectives regarding improvements made to their projects were analyzed, and the findings are presented in Figure 7.

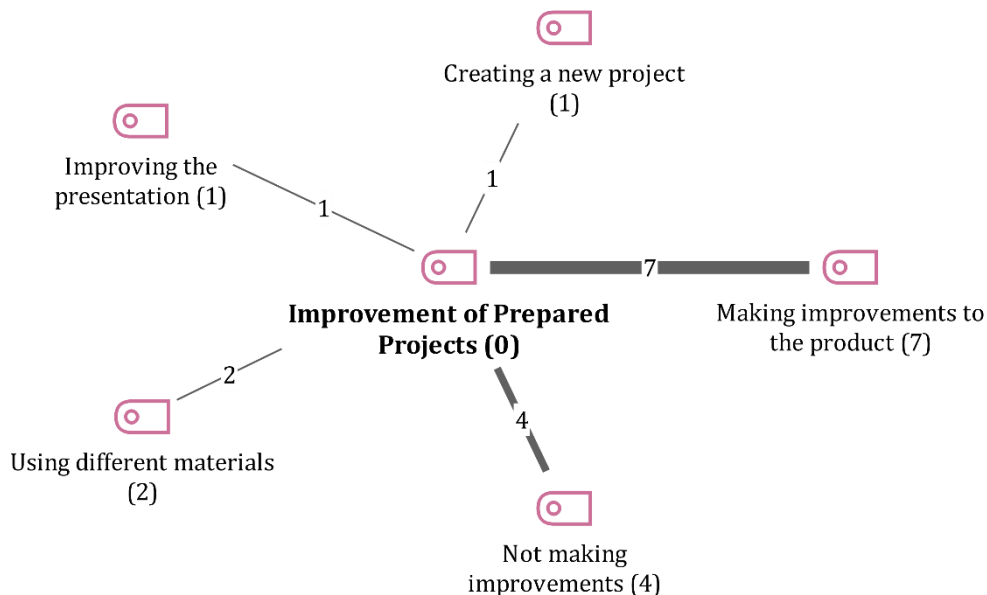


Figure 7. Students' Perspectives on Project Improvement

The findings in Figure 7 reveal students' tendencies to enhance their projects. Most students expressed a desire to improve their products and experiment with different materials. For example, S2 stated, *"I would have liked to use more peltier components."* demonstrating a focus on product enhancement, while S11 noted, *"I would place iron not only at the front but all around the robot."* reflecting consideration for material changes. Additionally, some students indicated intentions to improve their presentations or develop new projects. S10 commented, *"I would have made a more informative and technologically enriched presentation."* emphasizing presentation quality. In contrast, four students reported that no improvements were necessary, exemplified by S5's statement, *"I would not change anything as I believe the project was complete."* Overall, the findings indicate that students sought to refine both the physical and material aspects of their projects, as well as enhance their presentations for greater impact.

Findings on the Desire to Participate in the Competition Again

Finally, the study examined students' willingness to participate in the competition again and the reasons underlying this desire. All thirteen students indicated a desire to re-participate, and the corresponding findings are presented in Figure 8.

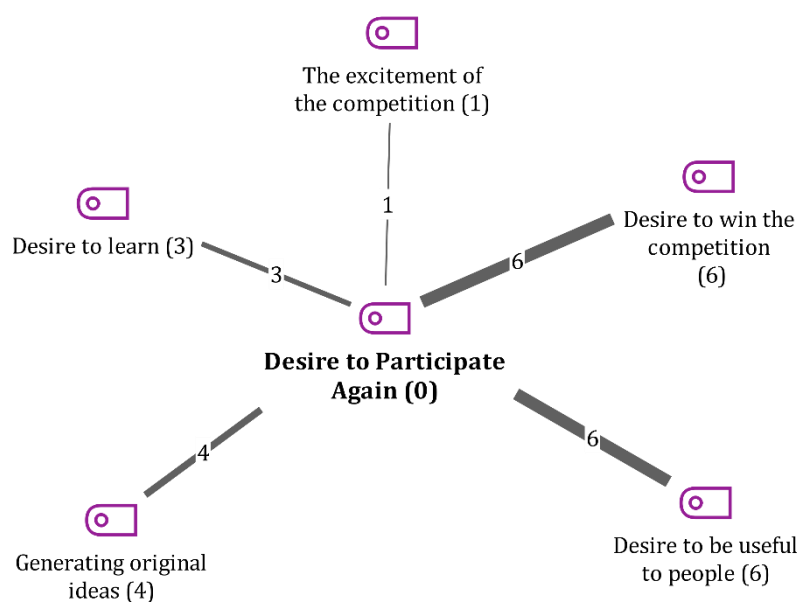


Figure 8. Students' Perspectives on Desire to Participate Again

An analysis of Figure 8 suggests that students' motivations for re-participation were primarily driven by a desire to win the competition and a commitment to producing socially beneficial outcomes. For instance, S1 stated, *"Yes, because winning Teknofest is my goal."* reflecting a competitive motivation, while S6 noted, *"Yes, because I enjoy creating valuable ideas for my country and the world."* demonstrating a socially oriented motivation. Additionally, students indicated that re-participation was motivated by opportunities to generate original ideas, acquire new knowledge, and experience the excitement of the competition. For example, S11 remarked, *"Yes, because one learns by challenging oneself,"* highlighting the desire for personal growth, while S13 stated, *"I would like to. New ideas can always help someone."* emphasizing both social contribution and creativity. The unanimous willingness of participants to re-enter the competition underscores the positive impact of the project development and competition experience on students.

RESULTS and DISCUSSION

Based on the positive outcomes of science-oriented project competitions, this study aimed to examine in depth the experiences of middle school students participating in Teknofest project competitions. Accordingly, students' perspectives were evaluated across multiple dimensions, including their reasons for participating, how they developed their project ideas, the contributions of the project process, the challenges they encountered and strategies for overcoming them, the extent to which reviewer feedback met their expectations, their efforts to improve their projects, and their desire to participate in future competitions.

The study first investigated students' reasons for participating in the competition. The findings indicated that their primary motivations were the desire to contribute to society, create a tangible product, and test themselves. Similarly, Topcu and Kumru (2022) examined students' participation in science fair projects and highlighted societal benefit as a key motivator. Karaer and Soytürk (2021) also emphasized that students aimed to prepare projects for the benefit of humanity. Tarhan and Gülmez (2021), who investigated project-based learning activities to develop entrepreneurial skills among students in Japan, noted that the ultimate goal of projects was to provide societal benefits. Çetin and Şengezer (2013) likewise reported that students believed their project work contributed to society. Another common motivation was the desire to produce a tangible product. Prior literature indicates that when students think of the project process, product creation is one of the first associations that comes to mind (Karakoç Topal, 2022; Topcu & Kumru, 2022). In the context of Teknofest, students actively engaged in developing projects that could benefit society, which likely explains why their responses emphasized societal contribution and product creation as the main sources of their project ideas. In addition, students

cited acquiring new knowledge, self-improvement, the desire to win the competition, and potential project awards as participation factors. Participation in science competitions is closely associated with curiosity, the desire to learn, and personal development (Blankenburg et al., 2016; Meydan, 2017). Czerniak and Lumpe (1996) found that students' motivations included learning new information, improving academic achievement, and receiving recognition or awards. Similarly, Dionne, Reis, Trudel, Guillet, Kleine, and Hancianu (2012) noted that interest in scientific inquiry, personal satisfaction, self-improvement, and socialization were important motivational factors in engaging in science project work. These findings suggest that project competitions are not merely competitive events but also rich learning environments where students can satisfy scientific curiosity, acquire new knowledge, and enhance academic skills. In other words, participation allows students to actively engage in scientific processes, fostering problem-solving abilities, creativity, and knowledge construction.

The study also examined how students developed their project ideas. Findings revealed that ideas were primarily generated in response to identified needs, personal curiosity, and everyday life problems. Prior research supports this, indicating that middle school students' motivations for project creation often stem from the desire to solve practical problems encountered in daily life and to explore areas of personal curiosity (Blankenburg et al., 2016; Czerniak & Lumpe, 1996; Karaer & Soytürk, 2021; Özbek & Dağyar, 2025). Yerdelen-Damar and Soyalt (2016) found that students often selected project topics that offered practical benefits and addressed frequently encountered problems. Eloy, Palmeira Ferraz, Silva Alves, and de Deus Lopes (2023) also noted that students' science and engineering projects predominantly focused on solving everyday problems. Consistent with these findings, students in the present study developed projects to address challenges they or others faced in daily life, satisfying curiosity while strengthening problem-solving skills and fostering creativity. Through this process, students not only applied scientific methods but also developed social responsibility and awareness of their communities.

The findings indicate that the project process contributes to students' acquisition of new knowledge, practical experience, and the development of their thinking skills. Scientific project competitions provide opportunities for students not only to acquire theoretical knowledge but also to consolidate it through practical application. Blankenburg et al. (2016) emphasized that one of the primary reasons students participate in science competitions is the desire to acquire new knowledge. The literature highlights that such competitions give students opportunities to gain knowledge, enhance creative and critical thinking, and engage in strategic problem-solving (Sözer, 2017; Yerdelen-Damar & Soyalt, 2016). Consequently, science competitions and projects constitute a valuable educational tool that not only fosters knowledge acquisition but also enables students to apply this knowledge in creative ways.

The process of developing scientific projects also exposes students to various challenges. In this study, students reported difficulties in stages such as production, design and material acquisition, application submission, and report writing. One of the primary challenges is selecting an appropriate project topic and transforming it into a scientific question—that is, defining and clarifying the problem (Blankenburg et al., 2016; Demirel et al., 2013). The literature also notes that students frequently face financial and technical constraints, as well as difficulties in conducting research and writing reports (Demirel et al., 2013; Edelson et al., 1999; Krajcik et al., 1998; Lachebo, Thuo, Labiso, & Demissie, 2024a). In particular, challenges in report writing often stem from insufficient research skills and limited experience with writing techniques. Yerdelen-Damar and Soyalt (2016) report that students developing scientific projects frequently struggle with testing their ideas, constructing models, and acquiring necessary materials. Such challenges may arise from inadequate financial resources in schools (Sözer, 2017; Lachebo et al., 2024a, 2024b), as well as insufficient knowledge and expertise among both students and teachers (Lachebo et al., 2024a, 2024b), potentially slowing project progress. In the present study, students indicated that they overcame challenges through individual and group efforts and by seeking support from teachers and families. Previous studies similarly emphasize that group collaboration, teacher guidance, and parental support help reduce difficulties in project work

(Ayvaci & Çoruhlu, 2010; Demirel et al., 2013; Meydan, 2017). Bowen and Stelmach (2020) further highlight that students receive parental assistance in idea generation, material acquisition, accessing information, communicating with experts, obtaining technical and financial support, and sustaining motivation. Considering the multifaceted nature of project development, support from peers, teachers, and parents is likely to positively influence students' motivation and commitment to completing their projects successfully.

The study also found that students wishing to improve their projects primarily aimed to refine the product, materials used, and presentation. The literature similarly indicates that while students are motivated to produce original products, they often encounter difficulties in developing innovative outputs due to both cognitive and technical deficiencies (Demirel et al., 2013; Lachebo et al., 2024a). Conducting projects under teacher guidance and with parental support is therefore considered effective in overcoming these challenges.

Finally, all participants expressed willingness to take part in future project competitions. Their motivations included achieving success, generating ideas, self-improvement, learning, and contributing to society. Such motivations reflect the positive impact of project competitions on students' cognitive, affective, social, and psychomotor development. Walan and McEwen (2018) emphasize that science and technology competitions significantly enhance students' 21st-century skills -particularly collaboration- increase interest in STEM fields, and positively influence classroom learning. These gains also enhance motivation and engagement, which are likely to encourage continued participation in related activities.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are proposed to increase the effectiveness of science-oriented project competitions such as Teknofest and to enhance students' experiences:

- Students' primary motivations include contributing to society, developing innovative products, and testing personal abilities. To strengthen these skills, it is recommended that the number of competitions addressing science- and society-relevant topics -such as environmental issues and sustainability- be increased.
- Gaps in students' knowledge and skills during the project process were identified. To address these deficiencies, project-based activities should be complemented with extracurricular programs and workshops focused on scientific project skills.
- As awards are a motivating factor, competitions such as Teknofest should implement diversified reward and incentive mechanisms to increase student interest and motivation.
- Since students often base project ideas on solving real-life challenges and societal needs, competitions should be expanded in scope and supported with diverse thematic areas. This approach is likely to foster creativity and problem-solving skills across multiple domains.
- The study shows that students relied heavily on teacher guidance, yet the literature highlights gaps in teachers' mentorship, content knowledge, and pedagogical competence. Training programs should therefore be expanded to enhance teachers' expertise in project management, content knowledge, and pedagogy.
- Students also received significant parental support. To strengthen this, seminars and workshops for parents should be organized to explain the educational benefits of project competitions, the project development process, and strategies for involvement.
- Because students frequently collaborated with peers to overcome challenges, future projects should encourage group-based implementation.
- Students faced difficulties in production, design, material procurement, submission, and report writing. To address these, project development training for teachers and students should be enriched, with a stronger focus on scientific research and report-writing skills.

- Given that many students struggled with design, material procurement, and submission, schools and students should receive institutional budgets, access to materials, and technical equipment. Partnerships with relevant organizations should be strengthened to provide sustainable support.
- Many students felt reviewer feedback did not fully meet their expectations. To address this, reviewer evaluation processes should use transparent criteria and provide constructive, actionable feedback.
- Since all students expressed willingness to participate in future competitions, enhancing media coverage and visibility of events like Teknofest is recommended to further boost engagement and national interest in STEM.
- Expanding national and international promotion, creating additional platforms for showcasing student projects, and establishing mechanisms to implement successful projects could help ensure that students' efforts lead to tangible outcomes.
- This study focused on middle school participants in Teknofest. Future research should investigate impacts on students at other educational levels, using diverse samples and mixed-method approaches. Comparative studies of similar project competitions could also yield broader insights.

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Relationship Between Nomophobia and Social Media Addiction in High School Students: A Study on 12th Graders¹

Sinan BİLİCİ²

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Abstract

The widespread use of smartphones worldwide facilitates daily life; however, it also gives rise to various fears, sources of anxiety, and health-related problems. This study aimed to investigate two of these issues: nomophobia (the fear of being without a mobile phone) and social media addiction. The research was conducted using a quantitative research method within the framework of a relational survey model. The sample group consisted of 12th grade students. Data were collected from a total of 541 students through convenience sampling. A personal information form, the Nomophobia Scale, and the Social Media Addiction Scale were utilized as data collection instruments. In the dataset exhibiting normal distribution, parametric tests such as the independent samples t-test, one-way analysis of variance (ANOVA), and Pearson correlation analysis were conducted using SPSS software. According to the main findings, the students' overall levels of nomophobia were found to be moderate. It was observed that as the time spent on smartphones and social media increased, levels of nomophobia also rose. Moreover, a statistically significant positive correlation was identified between students' nomophobia levels and their social media addiction. Parents of students with high levels of nomophobia and social media addiction can be informed and encouraged to limit screen time at home during certain hours, to practice digital detox as a family, and to serve as role models in this regard.

Keywords: smartphone, addiction, nomophobia, social media

INTRODUCTION

Rapid changes in information technologies have begun to change our daily habits and lifestyles. The boundaries of what humans can do with technology and the virtual world have expanded greatly. Individuals are increasingly connected to this evolving and changing virtual network and are facilitating their work through an invisible hand (Saribay and Durgun, 2019). Smartphones make access to this virtual world much easier and more widespread (Sadan and Ayas, 2021). The intensity of use of information technologies is also reflected in research reports. According to the We Are Social (2025) digital report, the number of people with mobile connections in Turkey corresponds to 92.1% of the total population. 88.3% of the total population in Turkey are internet users, and 75.6% of the total internet users and 85.5% of the population aged 18 and over use at least one social media platform. According to the August 2024 data of the Turkish Statistical Institute (TUIK), the rate of individuals using the internet in the 16-74 age group is 88.8%. The internet usage rate of children between the ages of 6-15 was 91.3%. The smartphone usage rate in the 11-15 age group was 76.1% and the social media usage rate was 79.0%.

The increasing features of smartphones and the ease of access to the internet have made them an indispensable part of our daily lives (Adnan and Gezgin, 2016). It is seen as a key that opens the door to different worlds, especially for young people (Yılmaz et al., 2018). Many studies have also shown that the internet and social media are increasingly used by the young population (Alptekin et al., 2021; Özdemir, 2021; Uslu, 2021). Young people, who spend most of their time on smartphones, which are a very popular tool, have difficulty continuing their daily lives without

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²Dr, Ministry of Education, Van-Türkiye, s.bilici84@gmail.com, orcid.org/ 0000-0002-0610-2126

using their smartphones (Buctot et al., 2020; Vagka et al., 2023). Some young people tend to meet their socialization needs from smartphones, which are an inevitable part of modern life, instead of their peers (Aydın and Kuş, 2023). It is an undeniable fact that smartphones make people's lives easier, but due to their problematic use, they also cause newly defined phobias and psychological disorders to emerge every day. In daily life, it is possible to see people who do not leave home without their smartphones, who feel uneasy when they are not with them (Göktaş and Demirer, 2022), and who have a second indispensable life in their smartphones (Sarıbay and Durgun, 2019). In addition to physical problems such as dry eyes, visual impairments and neck pain related to mobile phones, ranging from excessive use to addiction, some psychological problems also occur (Gürol et al., 2020; Yalçın et al., 2022; Yıldırım and Kişioğlu, 2018). One of the most important psychological problems caused by these technologies is the concept of "nomophobia", which is expressed as the fear of being deprived of a mobile phone or being disconnected from communication via mobile phones (King et al., 2010).

The concept of nomophobia comes from the English word nomophobia (No Mobile Phone Phobia). Nomophobia is a psychological condition that expresses negative emotions such as anxiety, restlessness and stress experienced by an individual when they are away from their mobile phone (King et al., 2010; King et al., 2013). It is stated that nomophobic individuals use their mobile phones regularly and intensively, always carry their chargers with them, and feel anxious and tense when their mobile phone batteries run out or when they cannot find their mobile phone nearby (Bragazzi and Del-Puente, 2014; Dixit et al., 2010). Yıldırım and Correia (2015) address nomophobia in a four-dimensional structure as not being able to access information, giving up convenience, not being able to communicate and losing connectedness. The dimension of not being able to access information reflects the discomfort of losing access to information through smartphones. The dimension of giving up convenience reflects the emotions felt as a result of giving up the convenience provided by smartphones. The dimension of not being able to communicate refers to the feelings felt when losing instant communication with people and not being able to use services that allow instant communication. The dimension of losing connectedness is related to the feelings of the individual when losing the communication opportunities provided by smartphones anytime, anywhere.

It is stated that individuals with nomophobia see their phones as a part of themselves, constantly look at their phones in social environments, and avoid places where device use is prohibited, which negatively affects their social lives (Güllüce et al., 2019; Köyönü et al., 2022; Yalçın et al., 2022). However, it has been revealed that nomophobia also causes problems such as academic procrastination (Fettahoğlu et al., 2019), low academic success (Akman, 2019; Özsavran and Ayyıldız, 2022), smartphone addiction (Buctot et al., 2020; Göktaş and Demirer, 2022; Kaviani et al., 2020), aggression and anger (Babayiğit et al., 2019), loneliness (Nelliyil and Anil, 2020; Santl et al., 2022; Şengör, 2020), problematic internet use (Mahgoub et al., 2019) and attention deficit (Kıraç, 2019).

Another psychological problem that affects the intensity of smartphone use and is thought to be related to nomophobia is social media addiction. Kuss and Griffiths (2017) defined social media addiction as compromising other activities and neglecting personal, academic and social responsibilities as a result of spending excessive and uncontrolled time on social media platforms. Individuals with social media addiction are usually overly preoccupied with their social media posts and act with the urge to log in and use social media in an uncontrollable way (Andreassen and Pallesen, 2014). The sense of freedom provided by social media, the possibility of surveillance (stalking), and the likes received control individuals with a contagious energy effect and strengthen their attachment to the social network (Sarıbay and Durgun, 2019). The increase in social media addiction can also be a triggering factor in the formation of nomophobia by preventing the addicted person from staying away from their mobile phone, which is a means of using social media (Babayiğit et al., 2019). This relationship between social media use and nomophobia was also a starting point for the current study.

When the literature is examined, it is seen that the studies focusing on nomophobia are largely focused on university students (Adnan and Gezgin, 2016; Al-Mamun et al., 2023; Essel et al., 2022; Kaur et al., 2021; Köyönü et al., 2022; Tuco et al., 2023; Yalçın et al., 2022). However, the attitudes and behaviors of adolescents towards digital devices play a critical role in shaping the risk of addiction. Observations made at the high school where the researcher worked revealed that smartphone ownership and frequency of use were significantly more common in the 12th grade compared to other grade levels. Accordingly, in the current study, 12th grade students in the adolescent age group were determined as the sample group. The fact that the group that uses the internet and smartphones the most in Turkey is young individuals makes this age group a segment at high risk for both internet and smartphone addiction (Göktaş and Demirer, 2022). This generation, called digital natives, can be more easily exposed to the types of addictions brought about by the digital age, along with the opportunities offered by technology (Yıldız et al., 2020). Adolescence is considered a critical period in the development of technological addictions in terms of internet, social media, digital games and smartphone use (Ektiricioğlu et al., 2022). For this reason, determining the nomophobia levels of young people who grow up in a digital culture and spend more time in the virtual world is of great importance in terms of revealing the current situation, determining possible risks and planning preventive interventions. On the other hand, the fact that nomophobia, a current problem that is widespread among young people, has an increasing effect especially on Generation Z has caused research and studies on the subject to gain momentum in recent years (Sadan and Ayas, 2021). Another factor that increases the importance of this study is the limited number of studies in the literature that examine the variables of nomophobia and social media addiction together. However, it is thought that these two phenomena are closely related to each other and that social media use reinforces smartphone addiction. In particular, the motivating effect of social networking sites on smartphone use is seen as an important factor in the development of nomophobia. In this context, examining the levels of nomophobia and social media addiction of 12th grade students in terms of various variables and revealing the relationship between them is considered important in terms of both contributing to the literature and shedding light on preventive guidance studies. In line with this purpose, answers were sought for the following sub-problems:

For 12th grade high school students:

- What are their levels of nomophobia?
- What are their levels of social media addiction?
- Do their levels of nomophobia differ significantly according to gender, school type, and the amount of time spent daily on smartphones and social media?
- Is there a significant relationship between nomophobia and social media addiction?

METHOD

The data used in the study was collected with the application permit of the Van Directorate of National Education, numbered E-89601435-20-99608950, dated 26.03.2024.

Research Design

This study is quantitative and uses both descriptive and relational survey models. The descriptive survey model aims to describe the current situation and usually involves collecting data from a large group of participants (Fraenkel et al., 2012). The relational survey model goes beyond description by examining possible relationships between variables, helping to better understand and predict phenomena, especially in educational research (Büyüköztürk et al., 2013). In this study, the descriptive survey was used to determine the levels of nomophobia and social media addiction, while the relational survey was applied to investigate how these levels differ according to variables such as gender, school type, and daily time spent on smartphones and social media.

Sampling

In this study, data were collected through face-to-face surveys from 572 12th grade students attending five different high schools in the central district of Van province, using a convenience

sampling method. In quantitative research, a sample size obtained by multiplying the number of scale items by the Likert-type response options is generally considered sufficient. Due to various reasons (e.g., incomplete or blank responses), the questionnaires of 31 students were excluded from the analysis, resulting in a final sample of 541 students whose data were included in the analyses. The demographic characteristics of the sample group are presented in Table 1.

Table 1. Demographic Characteristics of the Sample Group

	f	%		f	%
Gender			Smartphone daily usage time		
Female	363	67.1	0-2 hours	175	32.3
Male	178	32.9	2-4 hours	203	37.5
School type			4-6 hours	89	16.5
Science High School	83	15.3	6 hours or more	74	13.7
Anatolian High School	263	48.6	Social media daily usage time		
Vocational High School	126	23.3	0-2 hours	322	59.5
Imam Hatip High School	69	12.8	2-4 hours	134	24.8
Track			4-6 hours	53	9.8
Quantitative track	259	47.9	6 hours or more	32	5.9
Equal Weight track	203	37.5			
Social Sciences track	75	13.9	Purpose of using a smartphone		
Possession of a phone			Social media	274	50.6
Smart phone	430	79.5	Playing games	106	19.6
Push button phone	47	8.7	Listen to music	253	46.8
No phone	64	11.8	Study	300	55.5
			News tracking	114	21.1
			Research	155	28.7
			Other	33	6.1

Looking at the demographic information in Table 1, it is seen that the sample group is predominantly female and nearly 80 percent of them own a smartphone. It is noticeable that the daily time spent on smartphones and social media is concentrated in 0-2 and 2-4 hours. It is seen that social media, listening to music and studying come to the fore among the purposes of using smartphones.

Data Collection Tools

Personal information form, nomophobia scale and social media addiction scale were used as data collection tools.

Personal information form

Demographic information of 12th grade students regarding gender, school type, field, phone ownership, daily time spent with smartphones, daily time spent on social media and purposes of using the phone were obtained with this form.

Nomophobia scale

The Nomophobia Scale (NMP-Q), developed by Yildirim and Correia (2015) and adapted into Turkish by Yildirim et al., (2016), was used as the data collection tool in the study. The relevant scale is itemized according to the 7-point Likert type and consists of a total of 20 items. The scale consists of 4 subscales: not being able to access information (items 1-4), giving up convenience (items 5-9), not being able to communicate (items 10-15) and losing connectedness (items 16-20). The lowest score that can be obtained from the scale is 20 and the highest score is 140. In the developed scale, 20 points that the participants will receive indicate that they do not have nomophobia, scores between 21-59 indicate that they have a mild level of nomophobia, scores between 60-99 indicate that they have a moderate level of nomophobia, and scores between 100-140 indicate that they have an extreme level of nomophobia. The reliability coefficient of the

original scale calculated using Cronbach's alpha was given as .95, and the reliability coefficient of the scale adapted to Turkish was given as .92. The reliability coefficient was calculated as .89 in the current study.

Social media addiction scale

"The Social Media Addiction Scale for Adolescents" used in the study was developed by Özgenel et al., (2019). The scale is one-dimensional and consists of 9 items. Scale items are 5-point Likert type and are scored as "1 - Strongly disagree", "2- Disagree", "3- Undecided", "4- Agree", and "5- Strongly agree". There are no reverse scored items in the scale. A minimum of 9 points and a maximum of 45 points can be obtained from the scale. A high score from the scale indicates that the individual's social media addiction level is high, and a low score indicates that the individual's social media addiction level is low. The Cronbach Alpha reliability coefficient of the scale was calculated as 0.904. In the current study, the reliability coefficient was calculated as .863.

Collection and Analysis of Data

In selecting the sample group, attention was paid to including students from different types of schools (such as Science High School, Anatolian High School, Vocational High School, and Imam Hatip High School) and different academic tracks (such as quantitative track, equal weight track and social sciences track). Accordingly, 12th grade students from five different schools were reached by the researcher and completed the scales face-to-face on a voluntary basis. The data obtained from the sample group were transferred to a computer and analyzed using Microsoft Excel and SPSS software packages. First, a normality analysis was conducted to determine whether the data followed a normal distribution. Since the skewness and kurtosis values of the scale scores and subdimensions fell within the acceptable range of -1.5 to +1.5 (Tabachnick et al., 2007), parametric tests were applied. To answer the sub-problems of the study, descriptive statistics (mean and standard deviation), independent samples t-test, one-way analysis of variance (ANOVA), Pearson correlation, and simple linear regression analyses were utilized.

FINDINGS

Participants' Levels of Nomophobia and Social Media Addiction

The analysis results regarding the participants' levels of nomophobia and social media addiction are presented in Table 2.

Table 2. Participants' Nomophobia and Social Media Addiction Levels

	N	$\bar{X}$	SS	Situation
Nomophobia scale general	541	71.50	1.22	Moderate
Social media addiction	541	2.38	0.93	Low

According to the descriptive findings presented in Table 2, the students' overall levels of nomophobia were moderate, while their levels of social media addiction were low.

Nomophobia Levels by Gender

The results of the independent samples t-test performed to determine the nomophobia levels of the participants according to the gender variable are presented in Table 3.

Table 3. Nomophobia Levels According to Gender Variable

	Gender	N	M	SD	df	t	p	η^2
Not Being Able to Access Information	Female	363	3.74	1.56	539	-.657	.511	
	Male	178	3.84	1.69				
Giving up Convenience	Female	363	3.62	1.51	539	.072	.943	
	Male	178	3.61	1.64				
Not Being Able to Communicate	Female	363	4.06	1.60	539	4,774	.000**	.041
	Male	178	3.38	1.48				
Losing Connectedness	Female	363	3.04	1.52	539	-.406	.685	
	Male	178	3.10	1.67				
Nomophobia general	Female	363	3.63	1.18	539	1,547	.122	
	Male	178	3.46	1.29				

** $p < .001$

According to Table 3, there was no significant difference in the nomophobia levels of participants based on gender for the subdimensions of not being able to access information, giving up convenience and losing connectedness, as well as for the overall scale ($p > .05$). In the subdimension of inability to communicate, female students' nomophobia levels ($M = 4.06$, $SD = 1.60$) were found to be significantly higher than those of male students ($M = 3.38$, $SD = 1.48$), $t(539) = 4.774$, $p < .001$, with an effect size of 0.41.

Nomophobia Levels According to School Type

The results of the one-way ANOVA test performed to determine the participants' nomophobia levels according to the school type variable are presented in Table 4.

Table 4. Nomophobia Levels According to School Type Variable

	Source of variance	Sum of squares	df	Mean squares	F	p	η^2	Significant difference
Not Being Able to Access Information	intergroup	.577	3	.192	0.74	.974		-
	within groups	1396.086	537	2,600				
	Total	1396.663	540					
Giving up Convenience	intergroup	9,794	3	3,265	1,351	.257		-
	within groups	1297.463	537	2,416				
	Total	1307.256	540					
Not Being Able to Communicate	intergroup	75,242	3	25,081	10,364	.000**	.55	SHS<AHS SHS <VTAHS AHS < VTAHS AIHHS< VTAHS
	within groups	1299.552	537	2,420				
	Total	1374.795	540					
Losing Connectedness	intergroup	18,713	3	6,238	2,530	.056		-
	within groups	1324.030	537	2,466				
	Total	1342.744	540					
Nomophobia general	intergroup	18,861	3	6,287	4,250	.006*	.23	SHS < VTAHS AIHHS < VTAHS
	within groups	794,347	537	1,479				
	Total	813,208	540					

* $p < .05$, ** $p < .001$ (SHS: Science High School; AHS: Anatolian High School; VTAHS: Vocational Technical Anatolian High School; AIHHS: Anatolian Imam Hatip High School)

According to Table 4, no significant differences were found in participants' nomophobia levels for the subdimensions of not being able to access information, giving up convenience and losing connectedness based on school type ($p > .05$). However, a significant difference was observed in the subdimension of not being able to communicate ($F(3, 537) = 10.364$, $p < .001$) and in the overall nomophobia scale ($F(3, 537) = 4.250$, $p < .05$). The effect sizes for these two dimensions were .55 and .23, respectively. Post Hoc analysis revealed that vocational high school students had higher nomophobia levels compared to students from other types of high schools.

Nomophobia Levels According to Daily Time Spent on Smartphone

The one-way ANOVA test results performed to determine the participants' nomophobia levels according to the variable of daily time spent on the smartphone are presented in Table 5.

Table 5. Nomophobia Levels According to the Variable of Daily Time Spent on the Smartphone

	Source of variance	Sum of squares	df	Mean squares	F	p	η^2	Significant difference
Not Being Able to Access Information	intergroup	114,338	3	38,113	15,961	.000**	.082	0-2 hours<2-4 hours
	within groups	1282.325	537	2,388				0-2 hours<4-6 hours
	Total	1396.663	540					0-2 hours<6 hours and above
								2-4 hours<6 hours above
Giving up Convenience	intergroup	114,275	3	38,092	17,146	.000**	.026	0-2 hours<2-4 hours
	within groups	1192.981	537	2,222				0-2 hours<4-6 hours
	Total	1307.256	540					0-2 hours<6 hours and above
								2-4 hours<6 hours above
Not Being Able to Communicate	intergroup	27,846	3	9,282	3,700	.012*	.020	0-2 hours<6 hours and above
	within groups	1346.949	537	2,508				
	Total	1374.795	540					
Losing Connectedness	intergroup	34,591	3	11,530	4,733	.003*	.087	0-2 hours<6 hours and above
	within groups	1308.152	537	2,436				2-4 hours<6 hours above
	Total	1342.744	540					
Nomophobia general	intergroup	59,186	3	19,729	14,050	.000**	.073	0-2 hours<4-6 hours
	within groups	754,002	537	1,404				0-2 hours<6 hours and above
	Total	813,208	540					2-4 hours<6 hours above

* $p < .05$, ** $p < .001$

According to Table 5, significant differences were found in participants' nomophobia levels across the subdimensions of not being able to access information ($F(3, 537) = 15.961$, $p < .001$), giving up convenience ($F(3, 537) = 17.146$, $p < .001$), not being able to communicate ($F(3, 537) = 3.700$, $p < .05$), and losing connectedness ($F(3, 537) = 4.733$, $p < .05$), as well as in the overall nomophobia scale ($F(3, 537) = 14.050$, $p < .001$). The effect sizes of these variables were .082, .26, .020, .087, and .073, respectively. A post hoc analysis was conducted to identify between which groups the differences occurred. The findings indicated that as the amount of daily time spent on smartphones increased, nomophobia levels also tended to rise.

Nomophobia Levels According to Daily Time Spent on Social Media

The one-way ANOVA test results performed to determine participants' nomophobia levels according to the variable of daily time spent on social media are presented in Table 6.

Table 6. Nomophobia Levels According to the Variable of Daily Time Spent on Social Media

	Source of variance	Sum of squares	df	Mean squares	F	p	η^2	Significant difference
Not Being Able to Access Information	intergroup	106,678	3	35,559	14,803	.000**	.076	0-2 hours<2-4 hours
	within groups	1289.985	537	2,402				0-2 hours<4-6 hours
	Total	1396.663	540					0-2 hours<6 hours and above
								2-4 hours<6 hours above
Giving up Convenience	intergroup	136,863	3	45,621	20,932	.000**	.056	0-2 hours<2-4 hours
	within groups	1170.393	537	2,180				0-2 hours<4-6 hours
	Total	1307.256	540					0-2 hours<6 hours and above
								2-4 hours<6 hours above
Not Being Able to Communicate	intergroup	34,852	3	11,617	4,656	.003*	.025	0-2 hours<2-4 hours
	within groups	1339.943	537	2,495				
	Total	1374.795	540					
Losing Connectedness	intergroup	75,341	3	25,114	10,641	.000**	.105	0-2 hours<2-4 hours
	within groups	1267.402	537	2,360				0-2 hours<4-6 hours
	Total	1342.744	540					0-2 hours<6 hours and above
Nomophobia general	intergroup	72,709	3	24,236	17,576	.000**	.089	0-2 hours<2-4 hours
	within groups	740,499	537	1,379				0-2 hours<4-6 hours
	Total	713,208	540					0-2 hours<6 hours and above

* $p < .05$, ** $p < .001$

According to Table 6, significant differences were found in participants' nomophobia levels across the subdimensions of not being able to access information ($F(3, 537) = 14.803, p < .001$), giving up convenience ($F(3, 537) = 20.932, p < .001$), not being able to communicate ($F(3, 537) = 4.656, p < .05$), and losing connectedness ($F(3, 537) = 10.641, p < .001$), as well as in the overall nomophobia scale ($F(3, 537) = 17.576, p < .001$). The effect sizes of these variables were found to be .076, .056, .025, .105, and .089, respectively. A post hoc analysis was conducted to determine between which groups these differences occurred. The results indicated that as the amount of daily time spent on social media increased, nomophobia levels also tended to rise.

The Relationship Between Nomophobia Levels and Social Media Addictions

The results of the Pearson correlation test and simple linear regression analysis conducted to examine the relationship between students' levels of nomophobia and their social media addiction are presented in Table 7.

Table 7. Results of Correlation and Regression Analyses Between Nomophobia Levels and Social Media Addiction

Results of the Pearson Correlation Analysis						
	Not Being Able to Access Information	Giving up Convenience	Not Being Able to Communicate	Losing Connectedness	Nomophobia general	Social media addiction
Not Being Able to Access Information	---					
Giving up Convenience	.534**	---				
Not Being Able to Communicate	.386**	.489**	---			
Losing Connectedness	.418**	.488**	.467**	---		
Nomophobia general	.716**	.804**	.796**	.768**	---	
Social media addiction	.364**	.463**	.300**	.442**	.501**	---
Results of the Simple Linear Regression Analysis						
Variables	B	Std. Error	β	t	p	
(Constant)	2.002	.126		15.940	.000**	
Social Media Addiction	.661	.049	.501	13.451	.000**	
Dependent variable: Nomophobia						
R: .501	R ² : .251	F: 180.941	p: .000**			

** $p < .001$

To examine the relationship between the overall level of nomophobia and social media addiction in the sample group, a Pearson correlation test was conducted. Additionally, a simple linear regression analysis was performed to determine the extent to which social media addiction predicts overall nomophobia. When the data presented in Table 7 are examined, there is a significant and moderate positive correlation between social media addiction and overall nomophobia ($R = .501, R^2 = .251, p = .000$). Furthermore, there are high and significant positive correlations among the subdimensions of nomophobia. These high correlations indicate that the subdimensions of nomophobia interact with each other, suggesting that anxiety experienced in one dimension may affect the others as well. Positive and significant correlations were also found between all subdimensions of nomophobia and social media addiction. This finding suggests that as social media addiction increases, anxiety related to all dimensions of nomophobia (namely, not being able to access information, giving up convenience, not being able to communicate, and losing connectedness) also increases. According to the regression analysis results presented in Table 7, social media addiction accounts for 25.1% of the total variance. Based on the standardized regression coefficients (β), a one-unit increase in social media addiction results in a 50.1% increase in nomophobia.

RESULTS, DISCUSSION and RECOMMENDATIONS

In this study, the levels of nomophobia and social media addiction among 12th grade high school students were examined in relation to various variables, and the relationship between them was investigated. The students' overall levels of nomophobia were found to be moderate. This result is consistent with some studies in the literature (Asar et al., 2023; Coenen and Görlich, 2022; Essel et al., 2022; Gezgin et al., 2017; Köyönü et al., 2022; Yildirim and Correia, 2015). However, in other studies, participants' nomophobia levels were reported to be above average (Adnan and Gezgin, 2016; Gürol et al., 2020; Hoşgör, 2020). It can be argued that the presence of nomophobia, even at a moderate level, among 12th grade students preparing for the university entrance examination is concerning, as it has the potential to negatively affect their academic performance. Indeed, some studies have shown that nomophobia can lead to negative outcomes such as attention deficit, inability to concentrate on lessons, academic failure, and difficulties with adaptation (Akman, 2019; Erdem et al., 2016; Hoşgör, 2020). Additionally, nomophobia has been reported to contribute to the failure to complete important tasks on time and to academic procrastination behaviors resulting from prioritizing other activities (Fettahlioğlu et al., 2019).

According to the results of the study, no significant differences were found in overall nomophobia levels in terms of gender. This finding is consistent with the results of other studies (Adnan and Gezgin, 2016; Apak and Yaman, 2019; Hoşgör, 2020). However, there are also studies in the literature reporting differences favoring females (Aksoğan and Atıcı, 2022; Asar et al., 2023; Erdem et al., 2017; Güllüce et al., 2019; Köyönü et al., 2022; Özsavran and Ayyıldız, 2022; Vagka et al., 2023; Yildirim et al., 2016). The gender differences observed across studies may be explained by the different ways in which men and women use their smartphones. For example, men are more likely to use smartphones for work-related purposes, while women tend to use them primarily to communicate with their loved ones (Vagka et al., 2023). In the present study, a significant gender difference favoring females was found only in the "not being able to communicate" subdimension of nomophobia. Similarly, the studies by Coenen and Görlich (2022) and Essel et al. (2022) also reported higher nomophobia levels in the communication-related dimension. Furthermore, it has been suggested that such divergent results may indicate that gender differences are influenced by culture and that cultural context can substantially shape differences in technology-related behaviors (Aksoğan and Atıcı, 2022; Kaviani et al., 2020).

When examined by school type, it was noteworthy that vocational high school students had significantly higher levels of nomophobia, while science high school students exhibited lower levels. From the perspective of student profiles, the finding that science high school students—who typically experience higher levels of academic performance anxiety—had lower nomophobia levels is an expected result. In addition, it is thought that the differences may also be influenced by variations in school policies, as some high schools impose stricter restrictions on smartphone use while others adopt a more flexible approach.

One of the key findings obtained in this study is that as the time spent on smartphones increases, the level of nomophobia also rises. In parallel with this result, the literature has similarly reported higher levels of nomophobia among individuals who spend more time on their phones daily (Al-Mamun et al., 2023; Asar et al., 2023; Bajaj et al., 2020; Erdem et al., 2017; Hoşgör, 2020; Kaur et al., 2021; Yildirim and Correia, 2015; Yin et al., 2019). Indeed, it has been noted that the intensity of smartphone use is an important indicator of nomophobia (Sırakaya, 2018) and that nomophobia levels increase in line with the frequency of checking smartphones, the amount of time spent using mobile internet, and the duration of daily mobile internet use (Gezgin et al., 2017). This situation implies that the more we use our mobile phones, the more we fear being without them (Kaviani et al., 2020). Considering especially the high rate of mobile device use among young people, it has been emphasized that the younger generation is facing a new form of risk (Adnan and Gezgin, 2016).

It was also determined that the nomophobia levels of 12th grade students differed significantly depending on the amount of time they spent daily on social media. Although the students' levels

of social media addiction were found to be low, it was observed that nomophobia levels increased as the time spent on social media rose. Hoşgör's (2020) study similarly confirmed that the daily duration of social media use via smartphones had a positive and significant effect on students' nomophobia levels. In addition, the fear of missing out on developments on social media has been identified as an important predictor of nomophobia (Yıldız et al., 2020). Research indicates that individuals spend a substantial amount of time on social networks via their smartphones. The ease of access to smartphones and social networks, the abundance of visually engaging content, their entertaining nature, their role in passing time, and their widespread use in society all contribute to their impact on nomophobia (Sarıbay and Durgun, 2019). Based on the fact that young people primarily use the internet to access social media, it has been argued that higher levels of daily mobile internet use are associated with higher levels of nomophobia (Gezgin et al., 2017).

A moderate, positive, and statistically significant relationship was found between students' overall nomophobia levels and their levels of social media addiction. In other words, as social media addiction increases, overall nomophobia levels also tend to rise. Social media addiction accounts for approximately 25% of the variance in nomophobia. Studies in the literature also highlight that the fear of missing out on innovations and updates increases smartphone and social network use, thereby enhancing tendencies toward nomophobic behavior (Sarıbay and Durgun, 2019; Uyar and Özen, 2023). Notably, students who carry a phone charger, those who check their smartphones first thing in the morning, and those who check their phones before going to bed show significantly higher nomophobia levels compared to those who do not. This can be explained by their strong desire to stay informed about online updates (Sirakaya, 2018). In the study by Al-Mamun et al. (2023), smartphone addiction was found to significantly mediate the relationship between Facebook addiction and nomophobia. Similarly, Vagka et al. (2023) demonstrated that individuals whose primary use of smartphones is for social networking and messaging are at greater risk of developing nomophobia. Based on the findings of the study, the following recommendations can be made:

- Group guidance activities and individual support programs may be implemented for students identified as having high levels of nomophobia through assessments conducted by school counseling services.
- Digital detox events such as "social media breaks" or "phone-free days" can be organized on certain days with the voluntary participation of students.
- Since nomophobia tends to increase with longer durations of smartphone and social media use, activities aimed at improving students' time management skills can be planned.
- Parents of students with high levels of nomophobia and social media addiction can be informed and encouraged to limit screen time at home during certain hours, practice digital detox as a family, and serve as role models in this regard.
- Further research can be conducted to examine other potential predictors of nomophobia beyond social media addiction.
- Qualitative studies may be designed to investigate the causal relationship between nomophobia and social media addiction.

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Sosyal Bilgiler Öğretmen Adaylarının Millî Eğitim Akademisine Yönelik Görüşleri

Social Studies Teacher Candidates' Views on the National Education Academy

Yusuf YILDIRIM¹Alperen ÇALIŞKAN²**Atıf:**

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Öz

Bu çalışmada, sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine yönelik görüşlerinin belirlenmesi amaçlanmıştır. Araştırma nitel yöntemlerden birisi olan temel nitel araştırma deseninde yürütülmüştür. Bu bağlamda araştırmanın katılımcılarını 2024-2025 akademik yılı içerisinde Türkiye’de bulunan bir devlet üniversitesinde öğrenim gören 25 farklı sosyal bilgiler öğretmen adayı oluşturmaktadır. Öğretmen adaylarının seçiminde amaçlı örneklem yöntemlerinden kolay ulaşılabilir durum örneklemesinden yararlanılmıştır. Araştırmada toplanan veriler, nitel araştırmalarda sıklıkla kullanılan içerik analiziyle çözümlenmiştir. Analizler sonucunda öğretmen adaylarının cevaplarının sırasıyla; “yaklaşım”, “bilgiye erişim”, “ihtiyaç”, “gerekliklik”, “sürdürülebilirlik”, “alternatif”, “odak”, “uyum” ve “motivasyon” olmak üzere dokuz farklı temel boyut etrafında toplandığı anlaşılmıştır. Bazı öğretmen adayları Millî Eğitim Akademisini desteklerken büyük çoğunluğu yanlış olarak değerlendirmiştir. Özellikle olumlu yanlarına değinen öğretmen adaylarının da olumsuz görüşte olanlar gibi uygulama esnasında çok fazla problemle karşılaşabileceğini belirttikleri tespit edilmiştir. Bu kapsamda sosyal bilgiler öğretmen adaylarına Millî Eğitim Akademisinin daha net bir şekilde anlatılıp olumlu yanlarına değinilmesi gerekmektedir. Bunun için eğitim fakültelerinde Millî Eğitim Akademisine yönelik bilgilendirici faaliyetlerde bulunulmalıdır.

Anahtar Kelimeler: Millî Eğitim Akademisi, öğretmen adayı, sosyal bilgiler.

Abstract

This study aims to explore the perspectives of social studies teacher candidates regarding the proposed establishment of the National Education Academy in Türkiye. Employing a basic qualitative research design, the study draws on data collected from 25 social studies teacher candidates enrolled at a public university during the 2024-2025 academic year. Participants were selected using the easily accessible case sampling method, a type of purposive sampling method. Data were analyzed through content analysis, a widely used technique in qualitative research for identifying thematic patterns. The findings revealed that participants’ responses clustered around nine key thematic categories: “approach”, “access to information”, “need”, “necessity”, “sustainability”, “alternative”, “focus”, “adaptation”, and “motivation”. Although a minority of candidates expressed support for the National Education Academy, the majority viewed it critically. Interestingly, even those who voiced support acknowledged the potential for significant implementation challenges, echoing concerns raised by more suspicious participants. In this context, it is essential to provide social studies teacher candidates with a clearer understanding of the structure and objectives of the National Education Academy, emphasizing its positive aspects. Accordingly, informative events regarding the Academy should be organized within faculties of education.

Keywords: National Education Academy, teacher candidate, social studies.

¹Doç. Dr., Siirt Üniversitesi, Eğitim Fakültesi, Siirt-Türkiye, yusufyildirimakademik@gmail.com, orcid.org/0000-0003-0035-8443

²Arş. Gör., Muş Alparslan Üniversitesi, Eğitim Fakültesi, Muş-Türkiye, alperennaliskann@gmail.com, orcid.org/0000-0001-7804-5661

GİRİŞ

İnsan bilişsel, duyuşsal ve psikomotor özellikleri açısından bilgiye, öğrenmeye ve gelişmeye gereksinim duyan bir varlıktır (Karataş, 2020, s. 40). Bu gereksinimin karşılanabilmesi için eğitime ihtiyaç duyulmaktadır. Eğitim, bireyin ve toplumun kaderinin belirlenmesinde önemli araçlardan birisidir. Ertürk'e (1988, s. 13) göre eğitim bireyin davranışlarında kendi yaşantısı yoluyla ve kasıtlı olarak istendik değişim meydana getirme sürecidir. Fakat anlamı ve amacı yüzyıllar içerisinde farklılaşan eğitimin bu tanımı 21. yüzyıl için yeterli değildir. Zira 21. yüzyıl bireylerinden potansiyellerinin farkına varmaları, gizil yönlerini keşfetmeleri ve kendilerini gerçekleştirmeleri beklenmektedir. Bu bağlamda eğitim Yıldırım (2024, s. 32) tarafından bireyin potansiyelinin farkına vararak kendini gerçekleştirme yolunda attığı adımların ve yürüttüğü süreçlerin toplamı şeklinde ifade edilmektedir. Neticede eğitim bireyin kendini gerçekleştirme yolcuğunda birtakım yaşantılarla edinilen deneyimlerin tümüdür.

Toplumların ve devletlerin bugününü ve geleceğini etkileyen temel faktörlerin başında eğitim gelmektedir. Binlerce yıllık insanlık tarihi boyunca eğitimin önemi sürekli artırmıştır (Köç & Ünal, 2018, s. 66). Eğitimin omurgası, uygulayıcısı ve nesillerce aktarılmasını sağlayan ise öğretmenin bizi kendisidir (Duman, 2023, s. 78; Ünver, 2021, s. 32). Bu doğrultuda insanı bilgiyle donatan, beceriler kazandıran, vizyon ve misyon biçen öğretmenler her çağda ve toplumda değerli bulunmuşlardır (Karataş, 2020, s. 40). Öğretmenin eğitimdeki rolü çağın ihtiyaçları ve dönemin gelişmeleri doğrultusunda devamlı olarak değişmektedir. Örneğin geçmişte bilginin doğrudan aktarıcısı olan öğretmen, bugün bilginin inşasında rehber konumdaki kişidir.

Küreselleşmenin etkisiyle yeryüzü hızlı bir dönüşüm geçirmektedir. Bu durum dünya sorunlarının farkındalığına erişerek ortaya çıkan problemlere ilişkin çözüm üreten küresel vatandaşların yetiştirilmesini zorunlu kılmaktadır (Çalışkan, 2021, s. 2). Dolayısıyla burada öğretmenlere önemli görevler düşmektedir. Bunun için de öğretmenlerin nitelikli bir şekilde yetiştirilmeleri gerekmektedir. Öyle ki farklılaşan öğrenci profili, değişen eğitim teknolojileri ve sürekli yenilenen dinamik mesleki gelişim anlayışı öğretmen yeterliklerinin (İnal & Büyükyavuz, 2013, s. 222) 21. yüzyıl becerileri çerçevesinde yenilenmesi zorunluluğunu ortaya çıkarmaktadır. Bu yükümlülüğün karşılanması da öğretmenlerin sahip oldukları donanımların artırılmasını zorunlu kılmaktadır.

Bir eğitim sisteminde, istenilen çıktılara ulaşılabilmesi öncelikle öğretmen niteliklerinin geliştirilmesine bağlıdır (Yenen & Kılınç, 2018, s. 2768). Öğretmenlik sıradan herkesin yapabileceği bir iş olarak değil; özel bilgi, beceri ve uzmanlık gerektiren bir meslek olarak görülmektedir (Karataş, 2020, s. 40). Ülkelerin eğitim kalitesinin, öğretmen kadrosunun kalitesiyle orantılı olduğunu inkar edilemez bir gerçektir. Bu doğrultuda öğretmenler kaliteli, çalışkan, idealist ve yaşam boyu öğrenme idealini benimsemiş olarak yetiştirilmeli, ülke eğitiminin kendisine emanet edildiğinin bilincinde olmalıdırlar (Şengül Bircan, 2024, s. 1190). Nitekim gerçekleştirilen araştırmalarla öğretmen kalitesinin öğrenci başarısını arttırmada önemli etmen olduğu anlaşılmıştır (Harris & Sass, 2011, s. 798). Bu bakımdan bir öğretmen, aldığı eğitimin niteliğinin yanı sıra alanını tanıyan, alanına inanan ve dersini anlatırken de yaptığı işe tam anlamıyla kendini adayan (Akhan & Mert, 2021, s. 2) rol model olabilmelidir.

Öğretmenler topluma örnek olarak yaşam boyu öğrenmenin liderleri şeklinde ön plana çıkmalıdırlar. Öğrencilere her bakımdan örnek olan öğretmenler çocuklara öğrenme arzusunu aşılamalıdırlar (Çam & Üstün, 2016, s. 461). Bu kapsamda eğitimcinin mükemmeliyet arayışında yetkinlik esastır. Öğretmenler, bugünün dünyasının karmaşık zorluklarıyla yüzleşmek için çok çeşitli yeterliklere ihtiyaç duymaktadırlar. Öğretmenlik yeterlikleri, belirli bir ülkenin refahına katkıda bulunmayı amaçlayan etkili bir eğitim sürecinin doğal bir ögesidir (Yenen & Kılınç, 2018, s. 2769). Bundan dolayı geleceğin öğretmeni olacak öğretmen adaylarının branşlarında ve alanlarında alanda kendilerini yetiştirmeleri oldukça önemlidir. Bu husus sosyal bilgiler öğretmen adaylarında daha da artmaktadır. Çünkü sosyal bilgiler

öğretimiyle iyi vatandaş yetiştirmek amaçlanmaktadır. Belirlenen hedefi gerçekleştirmede de sosyal bilgiler öğretmenlerine ve sosyal bilgiler öğretmeni olacak öğretmen adaylarına büyük görev ve sorumluluklar düşmektedir (Karatekin vd., 2015, s. 75). Bu açıdan sosyal bilgiler öğretmen adayları donanımlı olarak yetiştirilmelidirler (Duman, 2023, s. 79).

Öğretmen eğitimi çoğu gelişmiş ülkede dört aşamada ele alınmaktadır. Bunlar sırasıyla; hizmet öncesi, işe başlama, hizmet içi ve ileri uzmanlık eğitimi şeklindedir (Güneş, 2016, s. 414). Son yıllarda öğretmenlik mesleğine yönelik çalışmaların giderek artması, Türkiye'deki eğitim öğretim faaliyetlerinin resmi olarak yerine getirilmesinde sorumlu kurum ve kuruluşların mesleki yönden yenilikler ortaya koymalarında etkili olmuştur (Karalı & Akıncı, 2022, s. 10). Özellikle son yıllar göz önüne alındığında, Türkiye sözleşmeli öğretmenlik uygulaması, 4+4+4 eğitim sistemi, eğitimde Fatih projesi gibi eğitime ve eğitimcilere yönelik birçok yeniliğe sahne olmaktadır. Atılan bu adımların temel amacı eğitimin kalitesini, niteliğini ve verimliliğini artırmaktır. Ancak hem uzun süredir kullanılmakta olan eğitim uygulamalarının bugün için eksik kalması hem de son yıllarda uygulamaya geçilen değişikliklerin uygulama sürecinde istenileni verememesi şeklinde nedenlerden dolayı ilgili kurumlar eğitimin kalitesini ve niteliğini artırmaya yönelik yeni yöntemler izlenmeyi sürdürmektedirler (Köç & Ünal, 2018, s. 66). Kuşkusuz bu noktada gerçekleştirilen tüm bu çalışmaları gelecekte uygulayacak olan öğretmen adaylarının eğitiminin nasıl olması gerektiği konusu gündeme gelmektedir.

Nitelikli bir eğitimi de nitelikli yetiştirilen öğretmenler gerçekleştirecektir (Akhan, 2015, s. 268). "Nitelikli öğretmeni nasıl yetiştirmeliyiz?" sorusu ise her dönem gündemdeki yerini korumaya devam etmektedir (Şengül Bircan, 2024, s. 1190). Bu durum öğretmen adaylarının eğitimlerini etkilemektedir. Buna bağlı olarak da öğretmen eğitimi programları çağın ihtiyaçları doğrultusunda güncellenmektedir. Türkiye'de de öğretmen adaylarının yeterliliklerinin geliştirilmesi için Millî Eğitim Akademisi şeklinde yeni bir uygulamaya geçilmiştir. Buna göre öğretmen adaylarının mesleğe hazırlanması, öğretmen, yönetici ve diğer personelin mesleki gelişimi ve görevde yükselmeleri için eğitim programları hazırlamak, uygulamak ve değerlendirmek Millî Eğitim Akademisi tarafından sağlanacaktır. Yeni bir uygulama olarak görülen Millî Eğitim Akademisinin nasıl sonuçlar vereceği ise şu an için belirli değildir. İleride Millî Eğitim Akademisinde öğrenim görececek öğretmen adaylarının uygulamaya ilişkin görüşlerinin şimdiden tespit edilmesi de sürecin doğru bir şekilde yürütülebilmesinde oldukça kritik bir role sahiptir. Fakat alan yazını tarandığında sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine yönelik görüşlerinin belirlenmeye çalışıldığı bir araştırmaya rastlanılamamıştır. Geleceğin öğretmenleri olacak ve Millî Eğitim Akademisinde öğrenim görececek sosyal bilgiler öğretmen adaylarının görüşlerinin belirlenmesi bakış açılarını ortaya çıkaracağı gibi sürecin niteliğini arttıracak, uygulamanın doğru ve yanlış yönlerinin fark edilmesini sağlayarak eksikliklerin giderilmesi noktasında yardımcı olacaktır. Bu bağlamda araştırmada sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine yönelik görüşlerinin belirlenmesi amaçlanmaktadır.

YÖNTEM

Araştırmanın Deseni

Bu araştırma, nitel yöntemlerden birisi olan temel nitel araştırma deseninde yürütülmüştür. Bu desende, katılımcıların hayatlarını nasıl yorumladıkları ve ne tür anlamlar yükledikleri üzerinde durulmaktadır (Merriam, 2018, s. 24). Bu doğrultuda sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine yönelik görüşleri tespit edilerek akademiye yükledikleri anlamlar ve yorumlar ortaya çıkarılmaya çalışılmıştır. Temel nitel araştırma desenin kullanılmasıyla sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine yükledikleri anlamlara ve yorumlara daha net bir şekilde ulaşılmıştır.

Katılımcılar

Araştırmanın katılımcılarını 2024-2025 akademik yılında bir devlet üniversitesinde 1., 2., 3. ve 4. sınıf düzeylerinde öğrenim gören 25 farklı sosyal bilgiler öğretmen adayı oluşturmaktadır. Katılımcıların seçiminde amaçlı örneklem yöntemlerinden kolay ulaşılabilir durum örneklemesinden yararlanılmıştır. Bu örneklem yöntemi, araştırmacıya hız ve pratiklik imkânı sağlamasının yanı sıra yakın ve erişilmesi kolay bir durumun seçilmesine olanak tanımaktadır (Yıldırım & Şimşek, 2021, s. 121). Katılımcıların cinsiyet, sınıf ve yaş dağılımları aşağıdaki tablodaki gibidir.

Tablo 1. Katılımcıların Cinsiyet, Sınıf ve Yaş Dağılımları

Öğrenci Kodu	Cinsiyet	Sınıf	Yaş	Öğrenci Kodu	Cinsiyet	Sınıf	Yaş
Ö1	Erkek	1	18	Ö14	Kadın	4	22
Ö2	Erkek	2	20	Ö15	Erkek	3	22
Ö3	Kadın	4	24	Ö16	Kadın	4	22
Ö4	Kadın	2	21	Ö17	Erkek	3	22
Ö5	Kadın	2	20	Ö18	Erkek	4	44
Ö6	Kadın	2	22	Ö19	Kadın	3	22
Ö7	Kadın	3	23	Ö20	Erkek	2	21
Ö8	Kadın	2	22	Ö21	Kadın	4	23
Ö9	Kadın	3	23	Ö22	Kadın	4	22
Ö10	Kadın	3	23	Ö23	Kadın	4	24
Ö11	Kadın	2	20	Ö24	Kadın	3	21
Ö12	Erkek	1	19	Ö25	Erkek	1	24
Ö13	Erkek	4	22				

Tablo 1 incelendiğinde araştırmaya katılan öğretmen adaylarının 16'sının kadın ve 9'unun erkek olduğu görülmektedir. Katılımcıların sınıf dağılımlarına bakıldığında ise 1. sınıf düzeyinde üç, 2. sınıf düzeyinde yedi, 3. sınıf düzeyinde yedi ve 4. sınıf düzeyinde sekiz öğretmen adayının araştırmada yer aldığı belirlenirken yaşlarının 18-44 arasında değişiklik gösterdiği tespit edilmektedir. Dolayısıyla katılımcıların cinsiyet, sınıf ve yaş durumları kendi arasında değişiklik göstermektedir. Bu durumun farklı görüşlerin daha iyi bir şekilde ortaya çıkarılmasına katkı sağladığı söylenebilir.

Veri Toplama Araçları ve Verilerin Toplanması

Bu araştırmada, öğretmen adaylarının görüşlerini belirleyebilmek amacıyla araştırmacılar tarafından geliştirilen yarı yapılandırılmış görüşme formundan faydalanılmıştır. Yarı yapılandırılmış görüşme formunun geliştirme sürecine alan yazını taranmasıyla başlanmıştır. Ardından araştırmanın amacına uygun oluşturulan sorular taslak forma aktarılmış ve hazırlanan form toplamda üç farklı sosyal bilgiler eğitimi alan uzmanına gönderilmiştir. Uzmanların görüşleri çerçevesinde düzenlenen form, amaca uygunluğunun kontrolü için farklı sınıf düzeylerinde öğrenim gören sekiz farklı öğretmen adayına uygulanmıştır. Katılımcılardan gelen dönütlerle bazılarının sonda olmaktan daha ziyade temel soru niteliği taşıdığına karar kılınmış ve soruların yerleri değiştirilerek veri toplama aracına nihai hali verilmiştir. Bu araştırmada kullanılan temel sorulardan bazıları aşağıdaki gibidir:

- Millî Eğitim Akademisi hakkında düşünceleriniz nelerdir?
- Bir öğretmen adayı olarak sizin Millî Eğitim Akademisinden beklentileriniz nelerdir?
- Millî Eğitim Akademisine uyum sağlayacağınızı düşünüyor musunuz? Neden?
- Millî Eğitim Akademisi öğretmenlik mesleğine bakışınızı nasıl etkiledi?

Araştırmacılar katılımcılara ulaşabilmek için öncelikle çalışmanın amacı hakkında öğretmen adaylarını bilgilendirmiş ve gönüllü olmak isteyenleri not almışlardır. Daha sonrasında

araştırmada yer almak isteyen gönüllü öğretmen adaylarıyla iletişime geçilmiştir. Öğretmen adaylarıyla görüşmeye başlanmadan sürecin ses kaydıyla kayıt altına alınacağı tekrardan hatırlatarak görüşmeler gerçekleştirilmiştir. Veri toplama işlemi her katılımcıyla 20-30 dakika arasındaki görüşmelerle sonlandırılmıştır.

Verilerin Analizi

Araştırmada toplanan veriler, nitel araştırmalarda sıklıkla kullanılan içerik analiziyle çözümlenmiştir. İçerik analizi, insan davranışları üzerinde doğrudan olmayan yollarla çalışmaya imkân tanıyan ve sosyal bilimlerde sıklıkla kullanılan bir tekniktir. Ayrıca içerik analizi, belli ilke ve kurallara uyarak erişilen bir verinin kodlanması ve bu kodlamalardan yola çıkarak içerik kategorilerin oluşturulduğu ve genel verinin özetlendiği hem sistematik hem de tekrarlanabilir teknik olarak da ifade edilebilmektedir (Büyüköztürk vd., 2021, s. 259). Bu bakımdan ilgili araştırmada yapılan içerik analizi sonrasında oluşan kodlardan yola çıkarak oluşturulan temaların raporlaştırılması için öğretmen adaylarının yanıtlarından elde edilen kodlamalar doğrudan alıntılarla desteklenmiştir. Araştırmada doğrudan yapılan alıntılar esnasında öğretmen adayları kodlamalarla (Ö1= Öğrenci 1, Ö5 = Öğrenci 5) ifade edilmiştir.

Geçerlik ve Güvenirlik

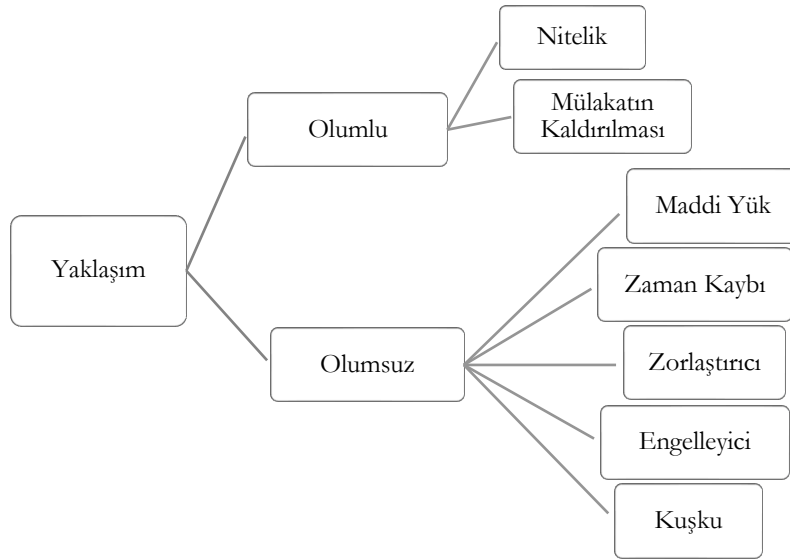
Nitel araştırmalarda bilgiye doğru bir şekilde ulaşabilmesi için gerekli tedbirlerin alınması geçerlik, farklı bir araştırmacının süreci açık ve ayrıntılı biçimde değerlendirilebilmesi ise güvenirliliktir (Yıldırım & Şimşek, 2021, s. 297). Bu araştırmada geçerliğin sağlanabilmesi amacıyla ayrıntılı betimlemelerden yararlanılmıştır. Geçerliğin ölçütlerinden birisi olan inandırıcılığı sağlamak amacıyla derinlik odaklı veri toplama süreci takip edilmiş ve her katılımcıya sorulara verdikleri cevapları teyit etmeleri istenmiştir. Geçerliğin ikinci ölçütü olarak değerlendirilen aktarılabirlik için görüşmelerden elde edilen verilere yönelik doğrudan alıntılar yapılarak süreç ayrıntılı betimlemelerle aktarılmaya çalışılmıştır. Diğer yandan araştırmanın güvenilirliğine ilişkin araştırmacı grubunda bulunmayan iki farklı sosyal bilgiler eğitimi alan uzmanına süreç detaylıca açıklanmış ve kendilerinden araştırma sonucunda ortaya çıkan çalışmayı tutarlılık açısından bir bütün olarak değerlendirmeleri talep edilmiştir. Uzmanların incelemesinin ardından araştırmanın bir bütün olarak tutarlı bir yapı arz ettiği belirlenmiştir. Son olarak tutarlılık incelemesine yardımcı olan her iki uzmana araştırmanın ham verileri ve bu veriler üzerinden üretilen tema ve kodlar paylaşılarak teyit incelemesi yöntemi işe koşulmuştur. Miles ve Huberman'ın (1994, s. 64) formülünden (Güvenilirlik=Görüş Birliği/Görüş Birliği+Görüş Ayrılığı) faydalanarak yürütülen süreçte %94 güvenirlilikle beklenen düzeye ulaşılmıştır. Nitel araştırmalarda uyumun/uzlaşmanın %90 ve üzeri olması halinde arzu edilen düzeyde güvenirliliğe erişilmektedir. Uzman önerileri doğrultusunda da araştırma verileri tematik hale getirilerek süreç tamamlanmıştır.

BULGULAR

Gerçekleştirilen analizler sonucunda araştırma bulgularının “yaklaşım”, “bilgiye erişim”, “ihtiyaç”, “gereklilik”, “sürdürülebilirlik”, “alternatif”, “odak”, “uyum” ve “motivasyon” olmak üzere dokuz farklı temel boyut etrafında toplandığı anlaşılmıştır. Oluşturulan bu dokuz temel boyutla ilgili olan temalar ve o temalar altındaki kodlar katılımcıların görüşlerinden alıntılar yapılarak raporlaştırılmıştır.

Yaklaşım

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine dair yaklaşımları Şekil 1’de sunulmuştur:



Şekil 1. Millî Eğitim Akademisine Yaklaşım

Şekil 1'e bakıldığında sosyal bilgiler öğretmen adaylarının; Millî Eğitim Akademisine ilişkin yaklaşımlarının "olumlu" ve "olumsuz" yönde olduğu görülmektedir. Bu bakımdan "olumlu" açıdan görüş bildirenlerin "nitelik" ve "mülakatın kaldırılması" gibi hususlara yoğunlaştıkları, "olumsuz" fikre sahip olanların ise "maddi yük", "zaman kaybı", "zorlaştırıcı", "engelleyici" ve "kuşku" şeklindeki kodlamaları dile getirdikleri tespit edilmiştir. Öğretmen adaylarının yanıtlarından anlam karmaşası içerisinde oldukları ve olumsuz yönleri daha çok vurguladıkları söylenebilir. Katılımcıların her bir koda ilişkin sunduğu örnek ifade aşağıda belirtilmiştir:

Olumlu

Nitelik. "Millî Eğitim Akademisiyle birlikte derse giren öğretmenin yeterliliği ölçülebilecek... Bu akademi hem öğrenci bakımından hem veli açısından çok yararlı bir sistem... En azından derslere yeterli donanımına sahip olan insanlar girecek." (Ö1)

Mülakatın kaldırılması. "Benim için mülakattan daha iyi olduğunu söyleyebilirim..." (Ö3)

Olumsuz

Maddi yük. "... Millî Eğitim Akademisinin maddi açıdan sıkıntıları var elbette. Maddi destek arttırılırsa daha iyi olabilir..." (Ö11)

Zaman kaybı. "Millî Eğitim akademisini öncelikle mesleğe başlamak için zaman kaybı olduğunu düşünüyorum..." (Ö10)

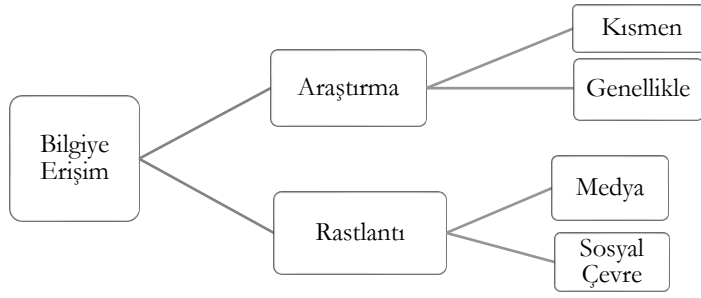
Zorlaştırıcı. "Gereksiz buluyorum, gereksiz yere bizi yoruyorlar bence. Dört yıllık bir lisans eğitimi alıyoruz zaten..." (Ö19)

Engelleyici. "Bence eğitim fakültelerinin önünü kapatmaya yönelik bir çalışmadır. Çünkü öğretmen akademisinin görevini eğitim fakülteleri yerine getiriyordu..." (Ö25)

Kuşku. "... Geçmişte mezun olup atanan öğretmenler yeterli bilgiyi almadılar mı, biz şu an da dört yıl boyunca yeterli bilgiyi almıyor muyuz? Neden biraz daha okuyoruz..." (Ö22).

Bilgiye Erişim

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine ilişkin bilgiye erişim faaliyetleri Şekil 2'de sunulmuştur:



Şekil 2. Millî Eğitim Akademisi için Bilgiye Erişim

Şekil 2 değerlendirildiğinde sosyal bilgiler öğretmen adaylarının; Millî Eğitim Akademisi için bilgiye erişimlerinin “araştırma” ve “rastlantı” ile oluştuğu görülmektedir. Dolayısıyla “araştırma” yönünde fikir beyan edenlerin “kısmen” ve “genellikle” kodlarına yoğunlaştıkları, “rastlantı” açısından görüş belirtenlerin “medya” ve “sosyal çevre” şeklindeki ifadeleri vurguladıkları görülmüştür. Bu bağlamda öğretmen adaylarının Millî Eğitim Akademisine ilişkin bilgilerinin devamlı ya da arada yapılan incelemelerle veya medya, aile ve arkadaş gibi çevrelerinden edindikleri duyularla rastlantı sonucu şekillendiği söylenebilir. Öğretmen adaylarının her bir kod için sunduğu örnek ifade aşağıda belirtilmiştir:

Araştırma

Kısmen. “Yani evet, az çok. Okudum daha çok. Eğitim fakültesinden mezun olanlar için üç dönem, formasyon alacaklar dört dönem olacakmış. Daha çok pratik eğitime yöneleceklermiş, teorik kısmı okuduğumuz fakültede öğrenecekmışiz. Üç sene çalıştıktan sonra da daimi kadro alabilecekmışiz...” (Ö6)

Genellikle. “Hep yapıyorum, halen yapıyorum. Elimden geldiği kadar takip etmeye çalışıyorum. Özellikle soru sayısında azalma olduğunu biliyorum... En son AGS’de konular değiştiğini öğrendim.” (Ö23)

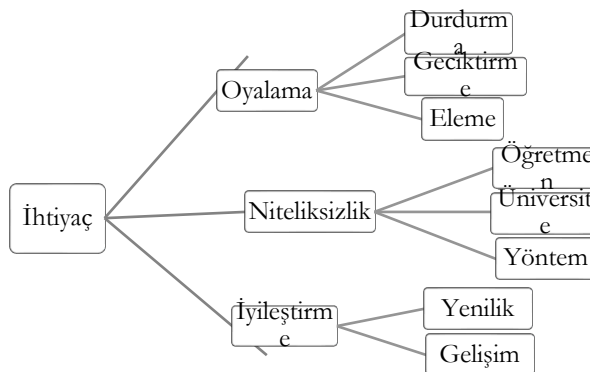
Rastlantı

Medya. “Instagram’dan eğitim sayfalarını takip ediyorum. Öyle karşıma çıkıyor. Öyle haberdar oluyorum. Özellikle bir araştırma yapmadım...” (Ö19)

Sosyal çevre. “Yok hayır. Arkadaş ortamında bahsediyoruz işte. Nasıl olduğunu, nasıl olacağını... Sadece üç dönemlik olduğunu, eğitim bilimleri derslerinin yanında teorik ve uygulamalı dersler göreceğimizi biliyorum.” (Ö9)

İhtiyaç

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine ihtiyaç duyulma nedenlerine dair görüşleri Şekil 3’te sunulmuştur:



Şekil 3. Millî Eğitim Akademisinin İhtiyacı

Şekil 3 incelendiğinde sosyal bilgiler öğretmen adaylarının; Millî Eğitim Akademisine ihtiyaç duyulma gerekçelerine ilişkin “oyalama”, “niteliksizlik” ve “iyileştirme” yönünde cevaplar verdikleri anlaşılmaktadır. Bu sebeple “oyalama” açısından görüşlerini beyan edenlerin “durdurma” “geciktirme” ve “eleme”, “niteliksizlik” bakımından düşüncelerini belirtenlerin “öğretmen”, “üniversite” ve “yöntem”, “iyileştirme” kapsamında fikir bildiriminde bulunanların “yenilik” ve “gelişim” kodlarında yanıtlar verdikleri görülmektedir. Sosyal bilgiler öğretmen adaylarının önemli bir bölümünün olumlu yönde görüş bildirdiği ve ihtiyaç duyulmasını farklı yorumlamalarla açıklamaya çalıştığı saptanmaktadır. Fakat bir kısmının atamaları durdurmak ya da geciktirmek için bu uygulamaya geçildiğine dair olumsuz görüşü savunduğu belirlenmektedir. Sosyal bilgiler öğretmen adaylarının her bir kod için sunduğu örnek ifade aşağıda yer almaktadır:

Oyalama

Durdurma. “Bence biraz atamaları durdurmak istenmesi etkili oldu...” (Ö1)

Geciktirme. “Bence atamaları geciktirmek amaçlı çıktı. Zaten atamalar geç ve zor oluyordu... Millî Eğitim Akademisinin de oyalamak için çıktığını düşünüyorum...” (Ö23)

Eleme. “Yani çok fazla mezun olduğu için bir nevi ön eleme gibi aslında...” (Ö4)

Niteliksizlik

Öğretmen. “Öğretmenlerin yetersiz olduğunu düşünüyor olabilirler...” (Ö13)

Üniversite. “Bence üniversitelerin niteliksiz eğitiminden çıkmış olabilir...” (Ö2)

Yöntem. “Mülakat uygulamasının yanlış bir yöntem olduğunu fark edip mülakat yerine böyle bir yöntem tercih edilmiş olabilir...” (Ö20)

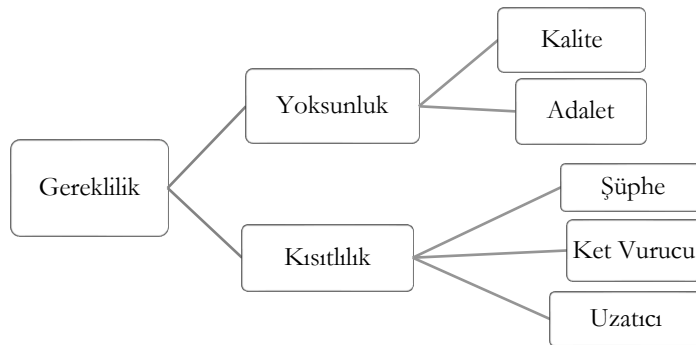
İyileştirme

Yenilik. “Çağımız çok hızlı ilerliyor. Bu yüzden Millî Eğitim Akademisini geliştirerek biraz yeni teknolojilerle iç içe öğretmenleri yetiştirmek adına...” (Ö14)

Gelişim. “... Biraz daha öğrencinin öğretmenlik sürecinde daha etkili olması ve akademik olarak öğretmenlerin daha iyi gelişiminin sağlanması için...” (Ö12)

Gereklilik

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisinin ne denli gerekli olduğuna dair görüşleri Şekil 4’te sunulmuştur:



Şekil 4. Millî Eğitim Akademisinin Gerekliliği

Şekil 4’e göre sosyal bilgiler öğretmen adaylarının; Millî Eğitim Akademisinin gerekliğine ilişkin “yoksunluk” ve “kısıtlılık” yönünde yanıtlar verdikleri anlaşılmaktadır. Bu doğrultuda “yoksunluk” açısından görüşlerini ifade eden öğretmen adaylarının “kalite” ve “adalet” kodlarında cevaplarını ilettikleri, “kısıtlılık” bakımından ise fikirlerini “şüphe”, “ket vurucu” ve “uzatici” olarak sundukları ortaya çıkmaktadır. Sosyal bilgiler öğretmen adaylarının görüşleri

detaylıca incelendiğinde büyük çoğunluğunun Millî Eğitim Akademisinin gerekliliğine dair olumsuz bir tavır aldıkları görülmektedir. Bu bağlamda her bir kod için sunulan örnek ifade aşağıdaki gibidir:

Yoksunluk

Kalite. “Evet, çünkü buradan donanımlı bir eğitim aldığımızı düşünmüyorum... Buradan eksikliklerimizi gidermek için eğitim verecekleri eğitimle geliştireceğimize inanıyorum...” (Ö24)

Adalet. “Bana diğer sistemlere göre biraz daha mantıklı geliyor açıkçası. Çünkü önceden mülakat yapıyordu. Çalışanların girememe çalışamayanların girme ihtimali oluşuyordu. Böylece kazanmış olanlar o stresten kurtulacaklar...” (Ö5)

Kısıtlılık

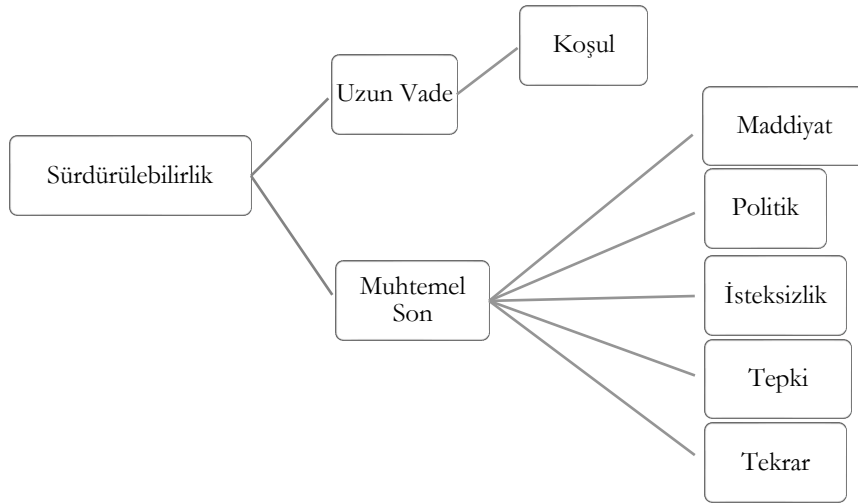
Şüph. “Çokta gerekli değil. Yani biz şimdi üniversitede dört yıl ders görüyoruz. Bunların hepsi doçent, profesör, onlardan ders alıyoruz. Şimdi acaba bunlara güvenmiyorlar mı gibi bir şüphede geliyor aklımıza...” (Ö3)

Ket vurucu. “... Biz dört yıl eğitim alıyoruz, staja da gidiyoruz zaten... Millî Eğitim Akademisine gittiğimizde meslek bilgisi, alan bilgisi tüm dersleri almış gerekli eğitimde görmüş oluyoruz. Tam öğretmenlik yapmak istediğimiz noktada bizi tekrardan sürece dâhil ediyorlar.” (Ö22)

Uzaticı. “Aslında gerekli olduğunu düşünmüyorum. Çünkü dört yıl boyunca burada eğitim görüyoruz, çok fazla derse maruz kalıyoruz ve bundan sonra tekrardan kalkıp farklı derslere maruz kalmak bence çok fazla zaman kaybına sebep olacak...” (Ö7)

Sürdürülebilirlik

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisinin sürdürülebilirliğine dair görüşleri Şekil 5'te sunulmuştur:



Şekil 5. Millî Eğitim Akademisinin Sürdürülebilirliği

Şekil 5'e göre sosyal bilgiler öğretmen adaylarının; Millî Eğitim Akademisinin sürdürülebilirliğini “uzun vade” ve “muhtemel son” yönünde cevaplarla açıkladıkları anlaşılmaktadır. Bu kapsamda “uzun vade” açısından görüşlerini ifade eden öğretmen adaylarının bir “koşul” sundukları, “muhtemel son” bakımından da fikirlerini “maddiyat”, “politik”, “isteksizlik”, “tepki” ve “tekrar” şeklindeki kodlarla açıkladıkları görülmektedir. Öğretmen adaylarının görüşlerine detaylıca bakıldığında büyük çoğunluğunun Millî Eğitim Akademisinin sürdürülebilir olacağını düşünmedikleri sonucuna varılmaktadır. Her bir kod için belirtilen örnek ifade aşağıda yer almaktadır:

Uzun Vade

Koşul. “Eğer başarı sağlanırsa mezun olan öğretmenler öğrencilere bilgi vereceklerse sürdürülebilir. Yoksa biter dört yıllık eğitimle devam eder.” (Ö19)

Muhtemel Son

Maddiyat. “Yani hayır, bir kere şöyle düşünün, ekonomik açıdan sıkıntılı, biz şimdi oraya gidince acaba yurt imkânı verilecek mi, ev mi tutacağız... Belki imkânım olmaz ev tutamam. Yurt verirler mi o da belli değil...” (Ö3)

Politik. “Bence çok fazla sürdürülemeyecek çünkü herkes olumsuz bakıyor bu konuya ve Türkiye’nin yapısına bağlı olarak her sene sınavlar değişiyor. Bunun da çok süreceğini düşünüyorum...” (Ö21)

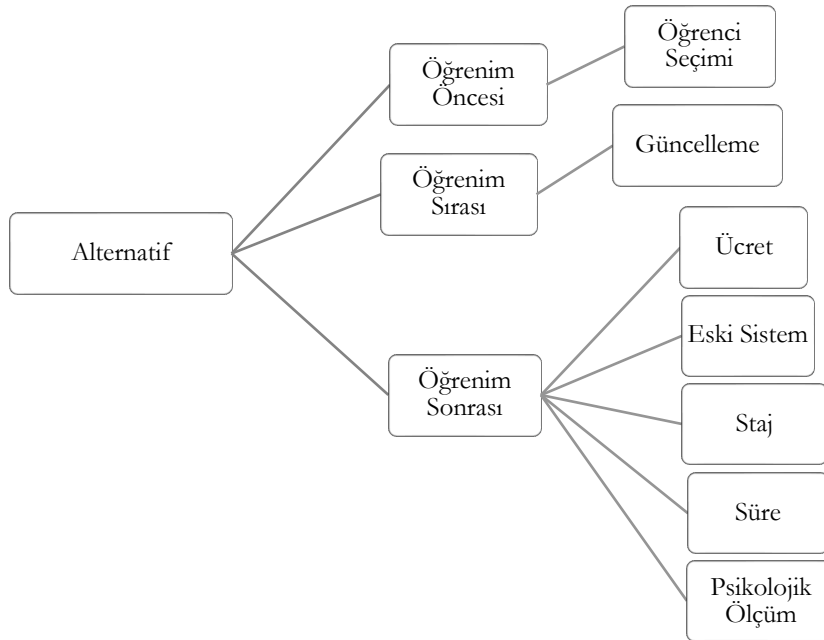
İsteksizlik. “Hayır bence devam etmeyecek. Çünkü hiç kimse oraya isteyerek gitmeyecek...” (Ö6)

Tepki. “Bence sürdürülemez. Çünkü çok fazla tepki alır...” (Ö12)

Tekrar. “Hayır, sürdürülebilir değil. Öğretmen adayları dört yıl boyunca çok sayıda eğitim alıyorlar. Yine aynı eğitimleri alacaklar...” (Ö16)

Alternatif

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine yönelik sundukları alternatifler Şekil 6’da sunulmuştur:



Şekil 6. Millî Eğitim Akademisine Alternatif

Şekil 6’dan sosyal bilgiler öğretmen adaylarının; Millî Eğitim Akademisine alternatif olarak “öğrenim öncesi”, “öğrenim sırası” ve “öğrenim sonrası” yapılacaklar şeklinde önerilerde bulundukları anlaşılmaktadır. Bu bağlamda “öğrenim öncesi” açısından görüşlerini ifade eden öğretmen adaylarının “öğrenci seçimi” için bir görüş sundukları, “öğrenim sırası” esnasında yapılabilecekler için “güncelleme”, konusunda fikir beyan ettikleri, “öğrenim sonrası” gerçekleştirilebilecek olanlara “ücret”, “eski sistem”, “staj”, “süre” ve “psikolojik ölçüm” şeklindeki cevaplarla düşüncelerini açıkladıkları belirlenmektedir. Katılımcıların görüşleri detaylıca irdelendiğinde büyük çoğunluğunun öğrenim sonrasına dair önerilerde bulundukları anlaşılmaktadır. Öğretmen adaylarının yanıtlarından yola çıkarak oluşturulan her bir kod için örnek ifade aşağıda yer almaktadır:

Öğrenim Öncesi

Öğrenci seçimi. “... Ben öğrencileri ilk olarak eğitim fakültesine mülakatla alırdım. Akademiye zaten gerek yok. Sonrasında yine KPSS tarzı bir sınavla atanırdı öğrenciler...” (Ö6)

Öğrenim Sırası

Güncelleme. “Üniversitenin üç yılının teorik eğitim, son bir yılının da tamamen uygulamalı ders olarak görülmesini önerebilirim...” (Ö9)

Öğrenim Sonrası

Ücret. “Herkes maaştan yakındığı için maaşı bir tık yükseltilebilir...” (Ö11)

Eski sistem. “Ben alternatif olarak KPSS puanıyla yapılmasını isterim. Eski sistemi öneriyorum...” (Ö15)

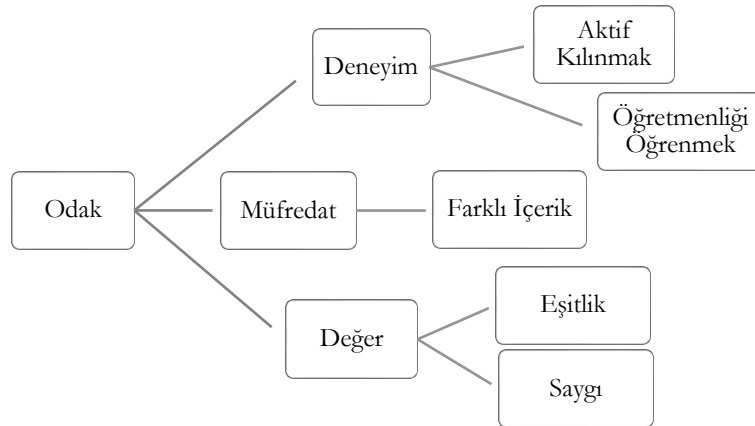
Staj. “Stajı kaldırarak dört yıl tamamlayan öğrenciler için Millî Eğitim Akademisi yapılabilirdi. Staj gibi görülebilirdi. Daha uygun olurdu bence...” (Ö22)

Süre. “... Nasıl bir yöntem sunabilirim, bilmiyorum. Ama en azından süreyi biraz daha kısaltabilirler diye düşünüyorum...” (Ö7)

Psikolojik ölçüm. “AGS yerine öğretmenlere psikolojik testler uygulamalıydı. Yani şu an günümüzü, benim çocukluğumu düşündüğümüzde empati kuramayan öğretmenlerle karşılaştım. Halen üniversitedeyim ve çoğu zaman bu durumla karşılaşıyorum.” (Ö23)

Odak

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisinde nelere odaklanılması gerektiğine dair görüşleri Şekil 7’de sunulmuştur:



Şekil 7. Millî Eğitim Akademisinde Odak

Şekil 7’ye göre sosyal bilgiler öğretmen adayları; Millî Eğitim Akademisinde odaklanılması gereken alanları “deneyim”, “müfredat” ve “değer” olarak belirtmişlerdir. Bu bakımdan “deneyim” için “aktif kılınmak” ve “öğretmenliği öğrenmek”, “müfredat” için “farklı içerik”, “değer” için “eşitlik” ve “saygı” kodlarında yanıtlar verdikleri tespit edilmektedir. Sosyal bilgiler öğretmen adaylarının bu görüşleri detaylıca incelendiğinde önemli bir bölümünün Millî Eğitim Akademisinde uygulamalı eğitime odaklanılarak kendilerinin aktif kılınması gerektiğini ve öğretmenliği tam manasıyla öğrenmek istediklerini vurguladıkları tespit edilmiştir. Her bir kod için sunulan örnek ifade aşağıda bulunmaktadır:

Deneyim

Aktif kılınmak. “Millî Eğitim Akademisinde beni daha aktif kılabilirler...” (Ö17)

Öğretmenliği öğrenmek. “... Öğretmenliğin nasıl yapılabileceğini öğretmeleri aslında.” (Ö4)

Müfredat

Farklı içerik. “Biraz daha farklı dersler olmasını isterdim. Daha çok şey katmasını isterim. Örneğin çocuk eğitimi, çocuk gelişimi üzerine odaklanılmasını sadece ders anlatmak olmasının çocukları anlayabilmek de önemli...” (Ö8)

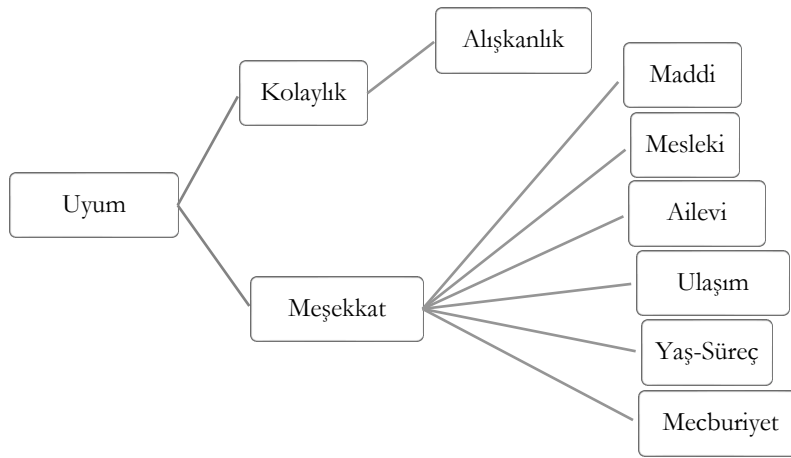
Değer

Eşitlik. “Ben ilk olarak adaletli olunmasını bekliyorum...” (Ö3)

Saygı. “Yani, daha saygılı yaklaşımları. Bize bir şey öğretilmelerinden ziyade daha saygılı ve ılımlı yaklaşarak öğrendiklerimizin üzerine bir şeyler katmaları...” (Ö13)

Uyum

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine uyum sağlama durumlarına dair görüşleri Şekil 8’de sunulmuştur:



Şekil 8. Millî Eğitim Akademisine Uyum

Şekil 8 değerlendirildiğinde sosyal bilgiler öğretmen adayları; Millî Eğitim Akademisine uyum sağlama durumlarını “kolaylık” ve “meşakkat” olarak gördüklerini ifade etmişlerdir. Bu bağlamda “kolaylık” için “alışkanlık” görüşünü savunurlarken “meşakkat” için “maddi”, “mesleki”, “ailevi”, “ulaşım”, “yaş-süreç” ve “mecburiyet” kodlamalarında cevaplar verdikleri görülmüştür. Nitekim öğretmen adayları, Millî Eğitim Akademisine uyum noktasında önemli güçlüklerle karşılaşacaklarını düşündükleri ve yıllardır eğitim sistemi içerisinde alışkanlık kazandıklarını vurguladıkları söylenebilir. Öğretmen adaylarının yanıtlarından ortaya çıkan her bir kod için sunulan örnek ifade aşağıdaki gibidir:

Kolaylık

Alışkanlık. “Evet, uyum sağlayacağıma inanıyorum. Bildiğimiz, alışık olduğumuz durumlar... Zorlanacağım bir durum olacağını pek sanmıyorum. Çünkü biz burada da hem teorik hem de uygulamalı eğitim aldığımız için çok zorlanacağımızı düşünmüyorum.” (Ö21)

Meşakkat

Maddi. “Büyük ihtimalle ilk zamanlarda zorlanacağım. Çünkü 30 farklı büyükşehirde olacağı için kendi şehrimin dışında bir yerde olacağım. Konaklama, yiyecek ve içecek durumları nasıl olacağı hakkında bilgim yok...” (Ö14)

Mesleki. “Düşünüyorum, sürekli ders anlatacağız çünkü sunumlarla. Yani benim için biraz yorucu olur herhalde...” (Ö10)

Ailevi. “İllaki zorlanacağım durumlar olacak. Örneğin ailemden koptuğumdan dolayı...” (Ö11)

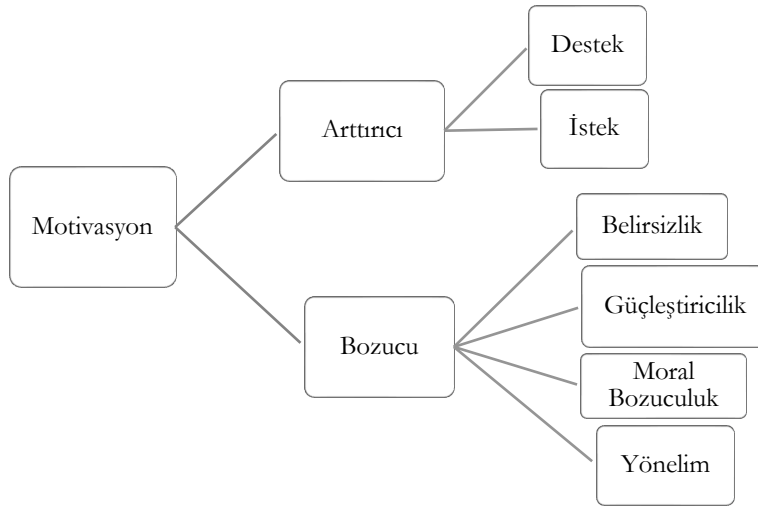
Ulaşım. “Belki Millî Eğitim Akademisi büyük şehirlerde olacağı için ulaşım yönünden olabilir, büyük şehirde olması problem olabilir...” (Ö17)

Yaş-Süreç. “Sürecin uzun olması beni zorlayacaktır...” (Ö25)

Mecburiyet. “... Zorunlu olduğu için uyum sağlamak zorundayım. Başka seçeneğim yok...” (Ö6)

Motivasyon

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine yönelik motivasyon durumları Şekil 9’da sunulmuştur:



Şekil 9. Millî Eğitim Akademisi Motivasyonu

Şekil 9’a göre öğretmen adaylarının; Millî Eğitim Akademisine dair motivasyonları “arttırıcı” ve “bozucu” olmak üzere ikiye ayrılmaktadır. Bunlar detaylıca incelendiğinde “arttırıcı” görüşünde olanların “destek” ve “istek” kodlarında yanıtlar verirken “bozucu” düşüncesindekilerin “belirsizlik”, “güçleştiricilik”, “moral bozuculuk” ve “yönelim” bağlamında gerekçeler sıraladığı ortaya çıkmaktadır. Neticede Millî Eğitim Akademilerinin sosyal bilgiler öğretmen adaylarının motivasyonları hem yükselttiği hem de bozduğu bulgusuna erişilmektedir. Her bir kod için sunulan örnek ifade aşağıda belirtilmiştir:

Arttırıcı

Destek. “... Önceden böyle bir uygulama kendim bildiği kadarıyla yoktu. Ama önceki sistemlere göre iyi olacağını düşünüyorum...” (Ö5)

İstek. “Ben zaten ortaokuldan beri öğretmenlik mesleğini istiyorum. Ben sadece bu mesleği istiyorum. Bu mesleği gerçekten isteyen kişi o akademiyi de tamamlar...” (Ö19)

Bozucu

Belirsizlik. “Beni olumsuz yönden çok etkiledi. Hatta iki hafta falan çalışmadığım da oldu. Çünkü hiçbir şey belli değildi her şey belirsizdi...” (Ö3)

Güçleştiricilik. “Evet etkiledi. Biraz daha atanmak zor oldu ve uzadı. Gittikçe de imkânsızlaşıyor sanki...” (Ö4)

Moral bozuculuk. “Şu anki eğitim fakültesindeki öğrencileri ümitsiz bir şekilde hayata bakışına sebep oluyor. Çevredeki okumuş ya da okumamış bütün insanların öğretmen adaylarına daha çok yüklenmesine yol açıyor...” (Ö18)

Yönelim. “Evet bırakmayı düşündüm... Farklı bir bölümden hazırlanmayı düşünüyorum...” (Ö10)

SONUÇLAR ve TARTIŞMA

Bu araştırmada sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine dair görüşlerinin belirlenmesi amaçlanmıştır. Gerçekleştirilen analizler sonrasında öğrencilerin verdikleri cevapların dokuz farklı boyutta toplandığı anlaşılmıştır. Bu boyutlar sırasıyla; “yaklaşım”, “bilgiye erişim”, “ihtiyaç”, “gereklilik”, “sürdürülebilirlik”, “alternatif”, “odak”, “uyum” ve “motivasyon” şeklindedir. Öğretmen adaylarının yanıtlarından oluşan boyutlar incelendiğinde Millî Eğitim Akademisi için çok farklı konularda fikir bildirildiği ortaya çıkmıştır.

Sosyal bilgiler öğretmen adaylarının Millî Eğitim Akademisine ilişkin yaklaşımları “olumlu” ve “olumsuz” olmak üzere iki farklı yapıdadır. Özellikle Millî Eğitim Akademisini destekleyen katılımcılar öğretmenlerin niteliklerinin artırılabilirliğini belirterek mülakatın kaldırılmasından duydukları memnuniyeti dile getirmişlerdir. Gençtürk vd. (2012, s. 1567) tarafından yürütülen araştırma da sosyal bilgiler öğretmen adaylarına göre ideal bir öğretmende bulunması gereken birçok nitelik ve değer olduğu tespit edilmiştir. İlgili araştırmada sosyal bilgiler öğretmen adaylarının ideal öğretmenin sahip olacağı mesleki beceri ve yeterliliklerde; nitelikli eğitim-öğretim yapma, iletişime önem verme, disiplinli davranma, örnek gösterilme, mesleğini sevmeye, iyi bir lider ve rehber olma gibi özelliklerin öne çıktığı belirlenmiştir. Harding ve Parsons’a (2011, s. 52) göre de iyi bir öğretmen çocuklarla iletişim kurabilmeli, müfredatı öğretebilmeli ve öğrenmeyi severken bu sevgiyi öğretim süreçlerinde paylaşabilmelidir.

Öğretmen adaylarının önemli bir bölümünün Millî Eğitim Akademisini yanlış bularak kendilerinde maddi yükümlülükleri arttırdığından, zaman kaybına neden olduğundan, mesleklerini zorlaştırdığından, eğitim fakültelerinin önemini kaybettirdiğinden, kendilerinin ve geçmişteki atanmış öğretmenlerin yeterli eğitim almadıklarına dair kuşkuvarlığının varlığından bahsetmişlerdir. Karataş’ta (2024, s. 6) öğretmen adaylarının cevaplarına benzer şekilde Millî Eğitim Akademisinin en zayıf ya da meydan okuyucu tarafını yükseköğretim kurumlarını, üniversitelerini ve özellikle eğitim fakültelerini yok sayması olarak yorumlamıştır. Sosyal bilgiler öğretmen adaylarının yanıtlarından Millî Eğitim Akademisine dair sahip oldukları yaklaşımların birbirinden farklılaştığını ve olumsuz biçimde kendini gösterdiğini sonucuna varılmaktadır.

Millî Eğitim Akademisine yönelik öğretmen adaylarının araştırma faaliyetleriyle bilgiye erişimlerinde “araştırma” ve “rastlantı” ön plana çıkmıştır. Özellikle bazı öğretmen adaylarının ara sıra bu konu üzerinde durdukları, bazılarının da devamlı konu üzerine incelemeler yaptıkları dikkat çekmektedir. Katılımcıların rastlantıyla ulaştıkları bilgiler ise daha çok medya araçları ile aile ve arkadaş çevreleri aracılığıyla gerçekleşmektedir. Bu konu hakkında aileleri ve arkadaşlarıyla konuştuklarını anlatan katılımcılar onlardan çeşitli öneriler aldıklarını, konu hakkında düşüncelerini öğrendiklerini ve genellikle benzer bir tutumda olduklarını söylemektedirler. Ayrıca televizyon ve sosyal medyada karşılaştıkları içeriklerin algılarının ve düşüncelerinin şekillenmesinde oldukça etkili olduğunu vurgulamaktadırlar.

Öğretmen kalitesini artırmak için öncelikle öğretmenlerin gelişim ihtiyaçlarının belirlenmesi gerekmektedir (Moeini, 2008, s. 2). Bu araştırmaya katılan sosyal bilgiler öğretmen adayları Millî Eğitim Akademisine neden ihtiyaç duyulduğuna dair “oyalama”, “niteliksizlik” ve “iyileştirme” yönünde yanıtlar vermişlerdir. Bu bakımdan Millî Eğitim Akademisinin kendilerini oyalamak için bir araç olduğunu iddia edenlerin atamaları durdurma, geciktirme ve ön eleme amaçlı kurgulandığını düşündükleri, niteliksiz olarak görenlerin daha çok bu durumun üniversite, öğretmenler ve yöntemden kaynaklandığını belirttikleri ve iyileştirme açısından değerlendirenlerin 21. yüzyılın yeniliklerine ayak uydurma ve akademik gelişim sağlama noktasında yardımcı olacağı kanaatinde oldukları saptanmaktadır. Thomas ve Beaucham’a (2011, s. 762) göre de öğretmenler değişimlere yeni roller üstlenerek ayak uydurabileceklerdir. Bu kapsamda iyileştirme yönünde yanıt belirtilen öğretmen adaylarının aynı fikirde olduğu dile getirebilir. Sosyal bilgiler öğretmen adaylarının görüşlerinin önemli bir bölümünün olumlu yönde olduğu ve ihtiyaç duyulmasını farklı yorumlamalarla açıklamaya

çalışıldığı görülmektedir. Öğretmenlerin etkili öğretim stratejilerini daha iyi anlayarak bilgilerini geliştirip artırmaları ve ilerletmeleri sayesinde yüksek niteliklere sahip olacakları düşünüldüğünde (Moeini, 2008, s. 2) bu görüşte olmaları oldukça sevindirici bir durumdur. Fakat bazılarının atamaları durdurmak ya da geciktirmek için bu uygulamaya geçildiğine dair olumsuz görüşleri savundukları da tespit edilmiştir.

Öğretmen adaylarının Millî Eğitim Akademisinin gerekliliğini “yoksunluk” ve “kısıtlılık” olarak gördükleri belirlenmiştir. Bu açıdan katılımcılar şu anda kalite ve adalet noktasında bir yoksunluk olduğundan bahsetmişlerdir. Ayrıca kısıtlılığa değinerek aldıkları eğitimin kalitesinden şüphe mi duyulduğunu, öğretmenlik yapma isteklerine ket vurulduğunu ve sürecin oldukça fazla uzatıldığını ifade etmişlerdir. Sosyal bilgiler öğretmen adaylarının kurdukları cümlelerden büyük çoğunluğunun şu anda bir ihtiyaç var olduğunu kabullenseler de gerekliliğine dair negatif bir tavır aldıkları neticesine ulaşılmaktadır. Thomas ve Beaucham’a (2011, s. 762) göre öğretmenler kendi mesleki kimliklerinin kapsamını ve bütünlüğünü daha iyi anlama noktasında önemli zorluklarla karşılaşabileceklerdir. Bu durum öğretmen adaylarının önemli bir anlam karmaşası yaşadıklarına da işaret etmektedir. Nitekim hali hazırda görev yapan sosyal bilgiler öğretmenleri de mesleklerine ilişkin beklentileri arasında maddi güven, kendini kanıtlama ve öğretme arzusunda olduklarını sıralamaktadırlar (Karalı & Akıncı, 2022, s. 10). Bu bağlamda öğrenimlerine devam eden sosyal bilgiler öğretmen adaylarının, görevde olan öğretmenlerle benzer şekilde isteklere sahip olduğu belirtilebilir.

Katılımcılar Millî Eğitim Akademisinin sürdürülebilirliğini “uzun vade” ve “muhtemel son” şeklinde açıklamışlardır. Bu doğrultuda bazı öğretmen adayları Millî Eğitim Akademisinin uzun vadede devamlılığının belli koşullarda gerçekleşeceğini ifade ederken önemli bir kısmının maddi imkânlar, politik gerekçeler, isteksizlik, tepki ve aynı eğitimin tekrarıyla karşılaşılacağı için muhtemelen çok geçmeden sonlanacağını belirttikleri görülmüştür. Öğretmen adaylarının bu cevaplarından çoğunun Millî Eğitim Akademisini sürdürülebilir olmayacağına inandıkları tespit edilmektedir. Köç ve Ünal’ın (2018, s. 76) araştırmasında da sosyal bilgiler öğretmen adayları yakın bir süre önce ilan edilen 2023 Eğitim Vizyonu için belirsizlik duydukları ortaya çıkmıştır. Dolayısıyla son yıllarda geliştirilen yeni yaklaşımların devamlılığına karşı sosyal bilgiler öğretmen adaylarının bir ön yargısı olduğu söylenebilir. Ayrıca Karataş (2024, s. 7) Millî Eğitim Akademisinde görevlendirme uygulamasının kurumsal kültür oluşturmak ve sürdürülebilir olmak bakımından zorlayacağını iddia etmektedir.

Sosyal bilgiler öğretmen adayları Millî Eğitim Akademisine alternatif olarak “öğrenim öncesi”, “öğrenim sırası” ve “öğrenim sonrası” yapılacaklar şeklinde üç farklı aşamada öneride bulunmuşlardır. Öğrenim öncesinde yapılacakları vurgulayan birkaç öğretmen adayının meslek tercihinin doğru yapılabilmesi ve ileride olumsuz bir durumla karşılaşılmasından dolayı üniversite öncesinde öğrencilerin seçimlerinin mülakatla yapılması gerektiğini savunmuşlardır. Öğrenim sırasında ise özellikle gerekliyse güncelleme çalışmalarlarıyla eğitim fakültelerinin müfredatlarının yenilenmesini teklif eden katılımcılar öğrenim sırasında yapılacaklara yeni sistemdeki ücretin arttırılmasını, sürenin biraz kısaltılmasını, üniversiteyi bitirdikten sonra bir yıl staj imkânı sunulmasını, AGS sınavı yerine öğretmenlere psikolojik testler uygulanmasını ve eski sisteme geri dönülmesini önerdikleri görülmüştür. Katılımcıların cevapları detaylıca incelendiğinde büyük çoğunluğunun öğrenim sonrasına dair önerilerde bulundukları anlaşılmaktadır. Demirkaya ve Ünal (2017, s. 34) tarafından yürütülen araştırmada da öğretmen adaylarının daha çok sözleşmeli öğretmenliğe, öğretmen atamalarında uygulanan sözlü sınav yöntemine karşı olumsuz bir bakış açısına sahip oldukları, öğretmen atamalarında ise genel olarak KPSS ve ÖABT’nin yeterliliğini dile getirdikleri görülmüştür. Bu araştırmada da katılımcıların sözlü sınav sisteminin kalkmasından duyulan memnuniyet ve KPSS puanıyla atanmanın gerçekleştirilmesi doğrultusunda talepleri benzer sonuçlara erişildiğine işaret etmektedir. Ancak ortaya çıkan sonuçlar öğretmen kalitesini artıran veya hatta gösteren faktörler konusunda bir fikir birliği bulunmadığına (Harris & Sass, 2011, s. 798) kanıt sunmaktadır.

Millî Eğitim Akademisinde odaklanması gereken alanlar öğretmen adayları tarafından “deneyim”, “müfredat” ve “değer” olarak belirtilmiştir. Yanıtlara bakıldığında sosyal bilgiler öğretmen adayları deneyim kazanmaları için aktif kılınmaları ve öğretmenliği tam manasıyla öğrenmeleri üzerinde durulmasından, hazırlanacak olan müfredatın dört yıllık eğitimlerinden farklı içerikte olmasına dikkat edilmesinden, değer noktasında kendilerine eşitlik imkânı sunularak saygılı davranılması gerektiği üzerine değerlendirmelerde bulunmuşlardır. Bu açıdan yeni öğretmenlerin en iyi şekilde nasıl yetiştirileceği ve mevcut öğretmen işgücünün kalitesinin nasıl artırılacağı konusunda tartışmalar halen devam ettiği (Harris & Sass, 2011, s. 798) söylenebilir. Bu durum öğrencilerin cevaplarında da görülmektedir. Diğer yandan Gençtürk vd. (2012, s. 1568) tarafından yürütülen araştırmada da sosyal bilgiler öğretmen adaylarının ideal öğretmende olması gereken kişilik özellikleri arasında birtakım değerlere sahip olması gerektiğini düşündükleri ortaya çıkarılarak değerlere uygun davranışların yaygınlaşmasında en önemli aracın eğitim olduğunu vurguladıkları anlaşılmıştır.

Araştırmadaki katılımcıların görüşleri detaylıca ele alındığında çoğunluğunun Millî Eğitim Akademisinde uygulamalı eğitime odaklanılarak kendilerinin aktif kılınması için görüş bildirdikleri ve öğretmenliği öğrenmek istediklerini belirttikleri tespit edilmektedir. Nitekim Ünlü vd. (2015, s. 383) tarafından yürütülen araştırmada öğretmen adaylarının Sosyal Bilgiler Lisans Programına ilişkin ilk olarak uygulama derslerinin yetersiz olduğu görüşünde oldukları bulgusuna erişilmiştir. Yine Akhan'ın (2015, s. 284) gerçekleştirdiği çalışmada da öğretmen adayları teorik dersleri fazla, uygulamalı dersleri az ve yetersiz bulmuşlardır. Bu bağlamda öğretmen yetiştirme programında uygulamalı derslerin daha ağırlıklı olmasını savunan öğretmen adayları, yeterli uygulama yapamadıkları için teorik derslerden de mesleki anlamda faydalanamadıklarını, öğrendikleri bilginin ezberden öteye gidemediğini ifade etmişlerdir. Öğretmen eğitimi geleneğinde de öğretmenlerin gerekli pedagojik becerilerini, öğretim teknolojilerini ve pratik deneyimlerini edinmeleri desteklenmektedir (Moeini, 2008, s. 2)

Öğretmen adaylarının Millî Eğitim Akademisine uyum sağlama durumlarını “kolaylık” ve “meşakkat” olarak nitelendikleri saptanmıştır. Özellikle üniversite ortamına alışkanlıklarını öne sürerek kendileri için kolay bir süreç olacağını savunan bazı sosyal bilgiler öğretmen adaylarının aksine maddi, mesleki, ailevi, ulaşım, yaş-süreç ve mecburiyet hususlarında meşakkat yaşayacaklarını belirten katılımcıların olduğu bulgusuna erişilmiştir. Bu konu hakkında Karataş (2024, s. 7) adaylara verilmesi taahhüt edilen ücretin, onların başka bir şehirde yaşamalarına yetecek bir miktar olmadığını altını çizmiştir. Bu yorum öğretmen adaylarının çekimserlikleriyle aynı doğrultudadır. Uyum noktasında öğretmen adaylarının bazıları hiçbir zorluk yaşamayacağını düşünürken bazılarının uyum noktasında önemli güçlüklerle karşılaşacaklarını dile getirdikleri söylenebilir.

Katılımcıların Millî Eğitim Akademisine ilişkin motivasyonları temelde “arttırıcı” ve “bozucu” olmak üzere iki farklı anlamda şekillenmektedir. Uygulamayı destekleyenlerin ve öğretmenliği çocukluklarından bu yana isteyenlerin motivasyonlarında bir değişme olmayıp genelde artış görülürken belirsizliğinden, sürecin güçleşmesinden ve farklı meslek dallarına yönelim gereksinimi hissedenlerin motivasyonlarının düştüğü anlaşılmaktadır. Öğretmen adaylarının bu açıklamalarından Millî Eğitim Akademisinin motivasyonları hem yükselttiği hem de bozduğu bulgusuna erişilmektedir. Buradan hareketle sosyal bilgiler öğretmen adaylarının öğretmenlik mesleğini isteyerek tercih ederek gelecekteki mesleklerini sevdikleri ve mesleklerine ilgi gösterdikleri (Duman, 2023, s. 87); iş güvencesi, mesleğin değeri, sosyal statü ve kariyer sahibi olma gibi konularda motivasyon düşüklüğü yaşadıkları (Recepoglu & İbret, 2019, s. 327) ifade edilebilir. Nitekim Akhan ve Mert (2021, s. 11) tarafından yapılan araştırmada da sosyal bilgiler öğretmen adaylarının meslek hayatında atanamama ve işsiz kalma gibi kaygılarının olduğu fakat buna rağmen alanlarını sevdiklerini ve büyük beklentilerle alanlarını seçtikleri saptanmıştır.

Özetle sosyal bilgiler öğretmen adayları Millî Eğitim Akademisini hem desteklemiş hem de akademiye dair çeşitli eleştirilerde bulunmuşlardır. Bu duruma pozitif yönde görüş bildirilerin özellikle öğretmenlik niteliklerinin arttırılmasından memnuniyet duydukları, negatif açıdan

yaklaşanların ise maddiyattan, sürecin uzunluğundan, vakit kaybından ve eğitim fakültesi varken neden ihtiyaç duyulduğundan yakındıkları tespit edilmiştir. Ayrıca katılımcıların Millî Eğitim Akademisini vakit kaybı olarak belirterek öğrenim sonrası döneme odaklanmaları ve bu uygulamanın bir ihtiyaç olduğunu dile getirip gerekliliğine dair negatif bir tavır almaları oldukça dikkat çekicidir. Bu husus öğretmen adaylarının Millî Eğitim Akademisine yönelik önemli bir anlam karmaşası yaşadıklarını ortaya koymaktadır. Özellikle bazılarının sosyal çevrelerinden ve medyadan edindikleri bilgilerle zihinlerindeki anlamları oluşturmaları bu durumun esas nedeni olarak görülmektedir. Araştırmada ulaşılan sonuçlar çerçevesinde aşağıdaki önerilerde bulunulabilir:

- Öğretmen adaylarının Millî Eğitim Akademisi hakkındaki bilgilerinin daha çok sosyal çevrelerinin ve çeşitli medya araçlarının etkisiyle rastlantı olduğu sonucuna ulaşılmıştır. Bu kapsamda eğitim fakültelerinde seminer, konferans gibi bilgilendirici faaliyetler yapılmalı ve çeşitli derslerin içeriğinde yer verilerek konu edinilmelidir.
- Öğretmen adaylarının büyük bir bölümü Millî Eğitim Akademisinin sürdürülebilir olacağına inanmamaktadır. Dolayısıyla uygulamanın devamlılığı adına tedbirler alınarak bu görüşün önüne geçilmelidir.
- Öğretmen adaylarının bazıları motivasyonları düştüğü için farklı alanlara yöneleceklerinden ya da meslek değişikliği yapabileceklerinden bahsetmişlerdir. Eğitim fakültelerinde bunu önlemeye ilişkin motivasyon yükseltici çalışmalar yapılmalıdır.
- Öğretmen adayları Millî Eğitim Akademisinin ortaya çıkmasından sonra ders aldıkları akademisyenlerin yeterliliğine dair kuşku duyduklarını belirtmişlerdir. Bu doğrultuda Millî Eğitim Akademisine neden gereksinim duyulduğu çeşitli platformlarda daha iyi bir şekilde anlatılmalıdır.
- Öğretmen adayları Millî Eğitim Akademisinin sadece büyük şehirlerde olmasının kendileri için problem oluşturabileceğini ifade ettikleri görülmüştür. Bu uygulamanın tüm eğitim fakültelerinde eş güdümlü halde yürütülmesine olanak tanıyarak öğretmen adaylarının özellikle maddi kaygılarının önüne geçilmelidir.

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Yazar Katkı Oranı

Araştırmacılar çalışmaya eşit oranda katkı sağlamıştır.

Çıkar Çatışması Beyanı

Yazarlar arasında herhangi bir çıkar çatışması olmadığını beyan ederiz.

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Social Studies Teacher Candidates' Views on the National Education Academy

Yusuf YILDIRIM¹Alperen ÇALIŞKAN²**Cited::**

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Abstract

This study aims to explore the perspectives of social studies teacher candidates regarding the proposed establishment of the National Education Academy in Türkiye. Employing a basic qualitative research design, the study draws on data collected from 25 social studies teacher candidates enrolled at a public university during the 2024–2025 academic year. Participants were selected using the easily accessible case sampling method, a type of purposive sampling method. Data were analyzed through content analysis, a widely used technique in qualitative research for identifying thematic patterns. The findings revealed that participants' responses clustered around nine key thematic categories: "approach", "access to information", "need", "necessity", "sustainability", "alternative", "focus", "adaptation", and "motivation". Although a minority of candidates expressed support for the National Education Academy, the majority viewed it critically. Interestingly, even those who voiced support acknowledged the potential for significant implementation challenges, echoing concerns raised by more suspicious participants. In this context, it is essential to provide social studies teacher candidates with a clearer understanding of the structure and objectives of the National Education Academy, emphasizing its positive aspects. Accordingly, informative events regarding the Academy should be organized within faculties of education.

Keywords: National Education Academy, teacher candidate, social studies.

INTRODUCTION

Human beings, in terms of their cognitive, affective, and psychomotor characteristics, are entities in need of knowledge, learning, and development (Karataş, 2020, p. 40). Meeting this need necessitates education, which serves as one of the most significant instruments in determining the destiny of both individuals and societies. According to Ertürk (1988, p. 13), education is the process of deliberately bringing about desirable changes in an individual's behavior through personal experiences. However, this definition of education, whose meaning and purpose have transformed throughout centuries, is no longer sufficient for the twenty-first century. In fact, contemporary individuals are expected to become aware of their potential, discover their latent capacities, and realize themselves. In this context, education is defined by Yıldırım (2024, p. 32) as the sum of the steps taken and processes undertaken by individuals in their journey of self-realization through the recognition of their potential. Ultimately, education constitutes the entirety of experiences acquired throughout an individual's journey toward self-fulfillment.

Education is among the foremost factors influencing both the present and the future of societies and states. Throughout the long course of human history, its significance has continually increased (Köç & Ünal, 2018, p. 66). At the center of education stands the teacher, who constitutes its backbone, carries out its practice, and ensures its transmission across generations (Duman, 2023, p. 78; Ünver, 2021, p. 32). In this respect, teachers—who equip individuals with knowledge, foster skills, and provide both vision and mission—have been valued in every era and society (Karataş,

¹Assoc. Prof. Dr., Siirt University, Faculty of Education, Siirt-Türkiye, yusufyildirimakademik@gmail.com, orcid.org/0000-0003-0035-8443

²Res. Assist., Muş Alparslan University, Faculty of Education, Muş-Türkiye, alperenncaliskann@gmail.com, orcid.org/0000-0001-7804-5661

2020, p. 40). The role of the teacher in education, however, has never been static; it has continuously evolved in accordance with the needs of the age and the developments of the period. For example, while teachers in the past were regarded primarily as direct transmitters of knowledge, today they are increasingly positioned as guides in the process of constructing knowledge.

Under the influence of globalization, the world is undergoing a rapid transformation. This reality necessitates the cultivation of global citizens who are not only aware of global issues but also capable of generating solutions to the problems that arise (Çalışkan, 2021, p. 2). In this context, teachers are entrusted with significant responsibilities. To fulfill these responsibilities, it is essential that teachers receive high-quality professional preparation. Indeed, the increasingly diverse student profile, the continuous evolution of educational technologies, and the dynamic nature of ongoing professional development highlight the necessity of renewing teacher competencies (İnal & Büyükyavuz, 2013, p. 222) within the framework of twenty-first century skills. Meeting this obligation requires strengthening and expanding the professional capacities that teachers already possess.

In any educational system, the achievement of desired outcomes primarily depends on the development of teacher qualifications (Yenen & Kılınç, 2018, p. 2768). Teaching is not regarded as an ordinary occupation that anyone can undertake; rather, it is a profession requiring specialized knowledge, skills, and expertise (Karataş, 2020, p. 40). It is an undeniable fact that the quality of a country's education is directly proportional to the quality of its teaching workforce. Accordingly, teachers should be trained as qualified, diligent, and idealistic professionals who embrace the principle of lifelong learning and remain conscious of the responsibility entrusted to them for the nation's education (Şengül Bircan, 2024, p. 1190). Research further demonstrates that teacher quality is a crucial factor in enhancing student achievement (Harris & Sass, 2011, p. 798). In this respect, a teacher should not only be shaped by the quality of their education but also act as a role model—one who knows and believes in their field and fully dedicates themselves to their work while teaching (Akhan & Mert, 2021, p. 2).

Teachers should stand out in society as role models and as leaders of lifelong learning. By setting an example in every respect, teachers are expected to instill in children a genuine desire for learning (Çam & Üstün, 2016, p. 461). In this context, competence is essential in the educator's pursuit of excellence. Teachers require a wide range of qualifications in order to confront the complex challenges of today's world. Teacher competencies, therefore, constitute a natural component of an effective educational process aimed at contributing to the welfare of a given society (Yenen & Kılınç, 2018, p. 2769). For this reason, it is of particular importance that prospective teachers are well-prepared within their disciplines and fields of specialization. This requirement becomes even more pressing in the case of social studies teacher candidates, as the teaching of social studies is directly oriented toward the cultivation of good citizenship. In achieving this objective, social studies teachers and future teachers of social studies are entrusted with major roles and responsibilities (Karatekin et al., 2015, p. 75). Hence, social studies teacher candidates must be trained in a well-equipped and comprehensive manner (Duman, 2023, p. 79).

Teacher education in most developed countries is addressed across four stages: pre-service, induction, in-service, and advanced specialization training (Güneş, 2016, p. 414). In recent years, the growing body of research on the teaching profession has influenced the professional innovations introduced by the institutions and organizations officially responsible for educational activities in Türkiye (Karalı & Akıncı, 2022, p. 10). Particularly in the last decade, Turkey has witnessed numerous reforms targeting both education and educators, such as the implementation of contracted teaching, the 4+4+4 education system, and the Fatih Project in education. The primary aim of these initiatives has been to improve the quality, standards, and efficiency of education. Nevertheless, the inadequacies of long-standing educational practices, alongside the limited success of recently implemented reforms during their application phase, have led relevant institutions to continue exploring new strategies to enhance the quality and effectiveness of education (Köç & Ünal, 2018, p. 66). At this point, the question inevitably arises as to how the

education of prospective teachers—who will ultimately carry these initiatives into the future—should be structured.

Quality education can only be achieved through the preparation of well-qualified teachers (Akhan, 2015, p. 268). The question of “How should qualified teachers be trained?” has therefore remained on the agenda in every era (Şengül Bircan, 2024, p. 1190). This issue directly influences the education of prospective teachers, and accordingly, teacher education programs are continuously updated in line with the needs of the age. In Türkiye, a new initiative—the establishment of the National Education Academy—has recently been introduced with the aim of enhancing the competencies of teacher candidates. According to this initiative, the Academy will be responsible for preparing, implementing, and evaluating educational programs designed to prepare teacher candidates for the profession, while also supporting the professional development and career advancement of teachers, administrators, and other educational staff. As a newly launched practice, however, the outcomes of the National Education Academy remain uncertain. Identifying the views of teacher candidates who will study at the Academy in the future is thus critical for ensuring that the process is implemented effectively. A review of the literature reveals no studies specifically examining the views of social studies teacher candidates regarding the National Education Academy. Yet, determining these views is of particular importance, as social studies teacher candidates represent the future educators who will experience this system firsthand. Their perspectives will not only provide insights into the implementation process but also contribute to improving its quality by identifying both strengths and weaknesses, thereby assisting in addressing potential shortcomings. In this context, the present study aims to explore the views of social studies teacher candidates concerning the National Education Academy.

METHOD

Research Design

This study was conducted using the basic qualitative research design, one of the qualitative research approaches. Such a design focuses on how participants interpret their lives and the meanings they attribute to their experiences (Merriam, 2018, p. 24). In this context, the study sought to identify the views of social studies teacher candidates regarding the National Education Academy and to reveal the meanings and interpretations they ascribed to it. Employing a basic qualitative design allowed for a clearer understanding of the perspectives and interpretations that social studies teacher candidates attached to the National Education Academy.

Participants

The participants of the study consisted of 25 social studies teacher candidates enrolled at a public university during the 2024–2025 academic year, spanning first-, second-, third-, and fourth-year levels. In the selection of participants, the convenient case sampling method—one of the purposive sampling strategies—was employed. This method not only offers the researcher speed and practicality but also allows the selection of cases that are accessible and easy to reach (Yıldırım & Şimşek, 2021, p. 121). The distribution of participants by gender, grade, and age is presented in the table below.

Table 1. Distribution of Participants by Gender, Grade, and Age

Student Code	Gender	Grade	Age	Student Code	Gender	Grade	Age
P1	Male	1	18	P14	Female	4	22
P2	Male	2	20	P15	Male	3	22
P3	Female	4	24	P16	Female	4	22
P4	Female	2	21	P17	Male	3	22
P5	Female	2	20	P18	Male	4	44
P6	Female	2	22	P19	Female	3	22
P7	Female	3	23	P20	Male	2	21
P8	Female	2	22	P21	Female	4	23
P9	Female	3	23	P22	Female	4	22
P10	Female	3	23	P23	Female	4	24
P11	Female	2	20	P24	Female	3	21
P12	Male	1	19	P25	Male	1	24
P13	Male	4	22				

When Table 1 is examined, it is observed that 16 of the teacher candidates were female and 9 were male. Regarding grade-level distribution, 3 participants were first-year students, 7 were second-year students, 7 were third-year students, and 8 were fourth-year students. The ages of the participants ranged from 18 to 44. Thus, the participants differed in terms of gender, grade level, and age, a diversity that may be considered to have contributed to revealing a broader range of perspectives.

Data Collection Tools and Procedure

In this study, a semi-structured interview form developed by the researchers was used to determine the opinions of teacher candidates. The development process of the form began with a review of the related literature. Based on this review, questions aligned with the purpose of the study were drafted and transferred into a preliminary version of the form. This draft was then submitted to three experts in social studies education for review. Following revisions made in line with expert feedback, the form was pilot-tested with eight teacher candidates from different grade levels to check for clarity and appropriateness. Based on the participants' feedback, certain questions initially designed as probing items were reclassified as core questions, and the sequence of questions was revised accordingly. The interview form was then finalized and used as the primary data collection tool for the study. Some of the main questions included in the semi-structured interview form were as follows:

- What are your thoughts about the National Education Academy?
- As a teacher candidate, what are your expectations from the National Education Academy?
- Do you think you will adapt to the National Education Academy? Why?
- How has the National Education Academy influenced your perspective on the teaching profession?

To recruit participants, the researchers first informed the teacher candidates about the purpose of the study and recorded the names of those who volunteered to participate. The researchers then contacted the volunteer teacher candidates to arrange interviews. Before beginning each interview, participants were reminded once again that the process would be audio-recorded. Data collection was completed through individual interviews lasting between 20 and 30 minutes with each participant.

Data Analysis

The data collected in the study were analyzed using content analysis, a method frequently employed in qualitative research. Content analysis is a technique that enables the study of human behavior in indirect ways and is widely used in the social sciences. It can also be defined as a systematic and replicable technique in which data are coded in accordance with specific principles and rules, categories are created from these codes, and the overall data are summarized (Büyükoztürk et al., 2021, p. 259). In this study, themes were generated based on the codes derived from the participants' responses, and these themes were reported and supported with direct quotations from the teacher candidates. During the presentation of direct quotations, participants were coded (e.g., P1 = Participant 1, P5 = Participant 5) to ensure anonymity and clarity.

Validity and Reliability

In qualitative research, validity refers to taking the necessary precautions to ensure accurate access to information, while reliability refers to the possibility of another researcher evaluating the process in a clear and detailed manner (Yıldırım & Şimşek, 2021, p. 297). In the present study, several strategies were employed to ensure validity. First, detailed descriptions were used throughout the reporting process. To enhance credibility, which is one of the key criteria of validity, in-depth data collection procedures were followed, and participants were asked to confirm their responses to the interview questions. To ensure transferability, another criterion of validity, direct quotations from the interviews were incorporated, and the process was reported with rich and detailed descriptions. Regarding reliability, the entire research process was explained in detail to two experts in social studies education who were not part of the research team. These experts were asked to evaluate the consistency of the study as a whole. Their review confirmed that the research demonstrated internal coherence. Additionally, to further enhance reliability, the raw data and the themes and codes generated from these data were shared with the two experts for confirmability checks. Using Miles and Huberman's (1994, p. 64) formula ($\text{Reliability} = \text{Consensus} / [\text{Agreement} + \text{Disagreement}]$), the inter-rater reliability was calculated at 94%, which exceeds the commonly accepted consensus of 90% in qualitative research for satisfactory reliability. Finally, the data were thematically structured in line with expert feedback, thereby completing the process.

FINDINGS

The analyses revealed that the research findings were grouped around nine main dimensions: "approach", "access to information", "need", "necessity", "sustainability", "alternative", "focus", "adaptation", and "motivation". Themes related to these nine dimensions, along with the codes under each theme, were reported and supported with direct quotations from the participants' views.

Approach

The approaches of social studies teacher candidates toward the National Education Academy are presented in Figure 1:

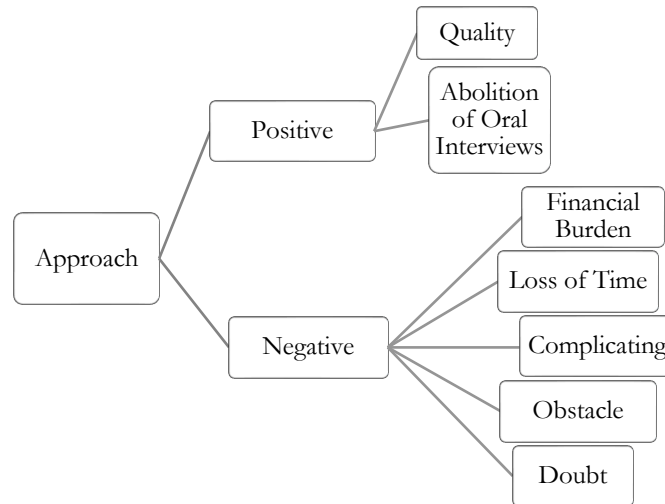


Figure 1. Approach to the National Education Academy

When Figure 1 is examined, it is observed that the approaches of social studies teacher candidates toward the National Education Academy were categorized as both “positive” and “negative”. Those expressing a “positive” perspective primarily emphasized issues such as “quality” and “the abolition of the oral interview” process. On the other hand, those holding a “negative” perspective highlighted concerns coded as “financial burden”, “loss of time”, “complicating”, “obstacle”, and “doubt”. The responses also suggest that teacher candidates were somewhat ambivalent, often underscoring the negative aspects more strongly than the positive ones. Examples of participants’ statements corresponding to each code are presented below:

Positive

Quality. *“With the National Education Academy, the competence of the teacher entering the classroom can be assessed... This academy is a very beneficial system both for students and for parents... At the very least, only people with sufficient qualifications will be teaching classes.”* (P1)

Abolition of oral interviews. *“For me, I can say that it is better than the interview process...”* (P3)

Negative

Financial burden. *“... Of course, the National Education Academy has financial difficulties. It could be better if financial support were increased...”* (P11)

Loss of time. *“I think the National Education Academy is primarily a waste of time for starting the profession...”* (P10)

Complicating. *“I find it unnecessary; they are tiring us out for no reason. After all, we are already completing a four-year undergraduate education...”* (P19)

Obstacle. *“In my opinion, this is an attempt to block the faculties of education. Because the faculties were already fulfilling the role of teacher training...”* (P25)

Doubt. *“... In the past, teachers who graduated and were appointed—did they not receive sufficient knowledge? And now, after four years of study, are we not receiving sufficient knowledge either? Why are we studying even longer...”* (P22).

Access to Information

The information access activities of social studies teacher candidates regarding the National Education Academy are presented in Figure 2:

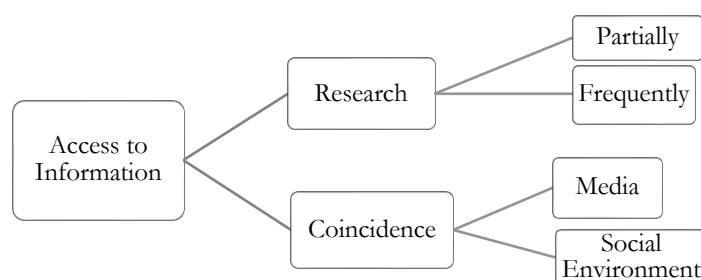


Figure 2. Access to Information about the National Education Academy

When Figure 2 is examined, it is seen that social studies teacher candidates accessed information about the National Education Academy either through “research” or by “coincidence”. Those who expressed obtaining information through “research” focused on the codes “partially” and “frequently”. In contrast, those who stated that their knowledge was shaped by “coincidence” emphasized “media” and “social environment”. In this regard, it can be said that teacher candidates’ knowledge of the National Education Academy was shaped either through continuous or occasional personal inquiries, or indirectly through incidental exposure via media, family, and peers. Selected quotations from participants corresponding to each code are presented below:

Research

Partially. “Well yes, more or less. I read about it. For graduates of education faculties, it will be three terms, while for those completing pedagogical formation, it will be four terms. They will focus more on practical training, while the theoretical part will be learned in our faculty. After working for three years, we will be able to obtain permanent staff status...” (P6)

Frequently. “I always do it, and I still do. I try to follow it as much as I can. For instance, I know that the number of questions has decreased... Most recently, I learned from the AGS that some topics had changed.” (P23)

Coincidence

Media. “I follow educational pages on Instagram. That’s how it comes up in my feed, and that’s how I become aware of it. I haven’t done any special research...” (P19)

Social environment. “No, not really. We just talk about it among friends—how it is, how it will be... I only know that it will last three terms and that we will have both theoretical and practical courses alongside educational sciences classes.” (P9)

Need

The views of social studies teacher candidates regarding the reasons for the need for the National Education Academy are presented in Figure 3:

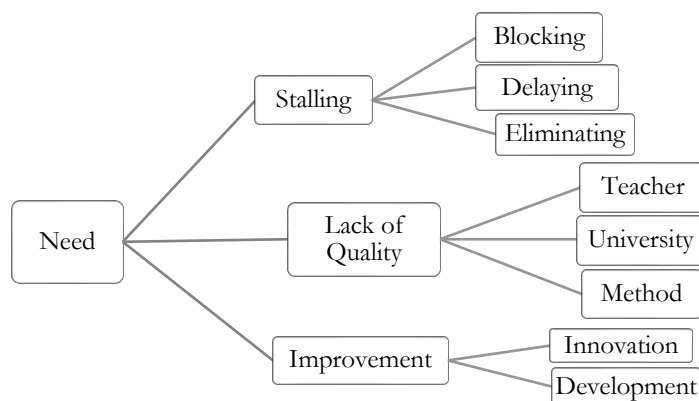


Figure 3. The Need for a National Education Academy

When Figure 3 is examined, it is seen that social studies teacher candidates expressed three main reasons for the perceived need for the National Education Academy: “stalling”, “lack of quality”, and “improvement”. Those who emphasized stalling referred to codes such as “blocking”, “delaying”, and “eliminating”. Participants who highlighted lack of quality focused on issues related to the “teacher”, the “university”, and the “method”. Finally, those who supported the Academy for improvement pointed to “innovation” and “development”. Overall, it was determined that a significant number of social studies teacher candidates provided positive opinions, interpreting the need for the Academy in different ways. However, some participants expressed negative views, arguing that the initiative was introduced primarily to delay or block teacher appointments. Illustrative quotations for each code are presented below:

Stalling

Blocking. “I think it was partly influenced by the desire to block appointments...” (P1)

Delaying. “In my opinion, it was introduced to delay appointments. Appointments were already late and difficult... I think the National Education Academy was created as a way to stall us...” (P23)

Eliminating. “Since there are too many graduates, it is actually a kind of pre-selection...” (P4)

Lack of Quality

Teacher. “They may think that teachers are inadequate...” (P13)

University. “In my view, it might have emerged from the poor quality of education in universities...” (P2)

Method. “They may have realized that the oral interview was the wrong method and therefore preferred such an alternative instead...” (P20)

Improvement

Innovation. “Our era is progressing very rapidly. For this reason, by developing the National Education Academy, it might be possible to train teachers in closer connection with new technologies...” (P14)

Development. “... It is intended to make students more effective during the teacher training process and to ensure greater academic development for teachers...” (P12)

Necessity

The views of social studies teacher candidates on how necessary they consider the National Education Academy are presented in Figure 4:

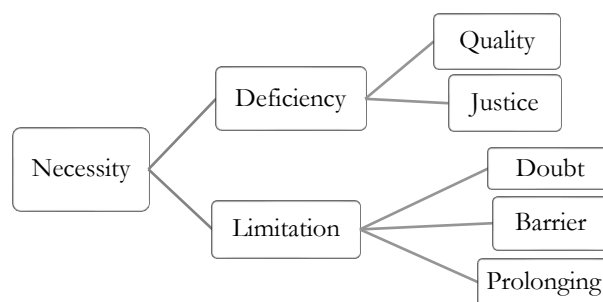


Figure 4. The Necessity of the National Education Academy

According to Figure 4, social studies teacher candidates expressed their views on the necessity of the National Education Academy in two categories: “deficiency” and “limitation”. Those who emphasized “deficiency” highlighted the codes “quality” and “justice”, while those who focused on limitation mentioned “doubt”, “barrier”, and “prolonging”. A closer examination of the participants’ responses revealed that the majority adopted a negative stance, expressing

skepticism about the necessity of the Academy. Selected quotations for each code are presented below:

Deficiency

Quality. “Yes, because I don’t think we are receiving sufficiently qualified training here... I believe that with the training provided by the Academy to address our shortcomings, we will be able to improve ourselves...” (P24)

Justice. “To be honest, it seems a bit more logical compared to other systems. Because previously, there were oral interviews. Sometimes those who worked hard could not succeed, while those who did not might have passed. This way, those who actually succeed will be free from that stress...” (P5)

Limitation

Doubt. “Not really necessary. I mean, we are already taking courses for four years at university. All of them are taught by associate professors and professors. Now, it makes us wonder—don’t they trust these instructors...” (P3)

Barrier. “... We study for four years, and we already go to internships... By the time we enter the National Education Academy, we will already have completed subject matter knowledge, pedagogical knowledge, and all required courses. Just when we are ready to actually start teaching, they include us in the process again.” (P22)

Prolonging. “I honestly don’t think it’s necessary. Because we already study here for four years, take many courses, and then having to go through additional courses again will, in my opinion, cause a great waste of time...” (P7)

Sustainability

The views of social studies teacher candidates on the sustainability of the National Education Academy are presented in Figure 5:

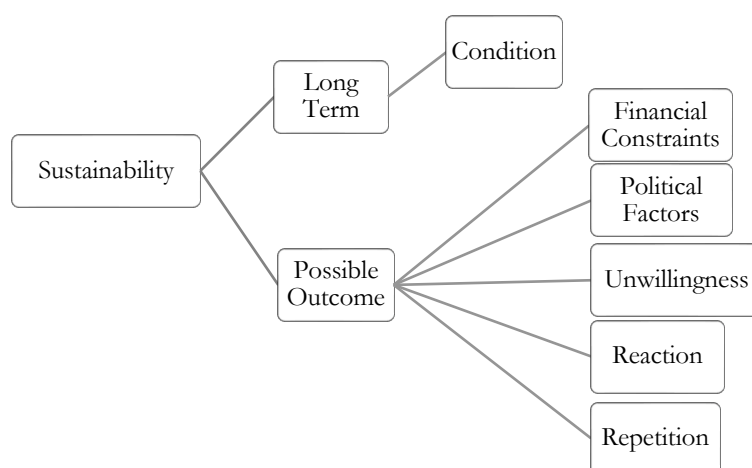


Figure 5. Sustainability of the National Education Academy

According to Figure 5, social studies teacher candidates explained their views on the sustainability of the National Education Academy under two categories: “long term” and “possible outcome”. Participants who referred to the “long term” dimension emphasized a “specific condition” for sustainability, whereas those who highlighted the possible outcome dimension expressed their views through the codes “financial constraints”, “political factors”, “unwillingness”, “reaction”, and “repetition”. A detailed examination of the responses indicated that the majority of teacher candidates believed the National Education Academy would not be sustainable in the long run. Illustrative quotations for each code are presented below:

Long Term

Condition. “If it succeeds, if the graduates are able to pass on knowledge to students, then it will be sustainable. Otherwise, it will end and continue only with the four-year education.” (P19)

- Possible Outcome

Financial constraints. “No, because think about it — there are already economic problems. When we go there, will they provide dormitories, or will we have to rent a house? Maybe I won’t have the means to rent one. And whether they provide dormitories is also uncertain...” (P3)

Political factors. “I don’t think it will last long, because everyone views it negatively. And considering Turkey’s system, exams change every year. I don’t think this will continue for long either...” (P21)

Unwillingness. “No, I don’t think it will continue. Because nobody will want to go there willingly...” (P6)

Reaction. “I think it will be unsustainable, because it will face too much backlash...” (P12)

Repetition. “No, it’s not sustainable. Teacher candidates already take many courses over four years. And then they will take the same courses again...” (P16)

Alternative

The alternatives proposed by social studies teacher candidates regarding the National Education Academy are presented in Figure 6:

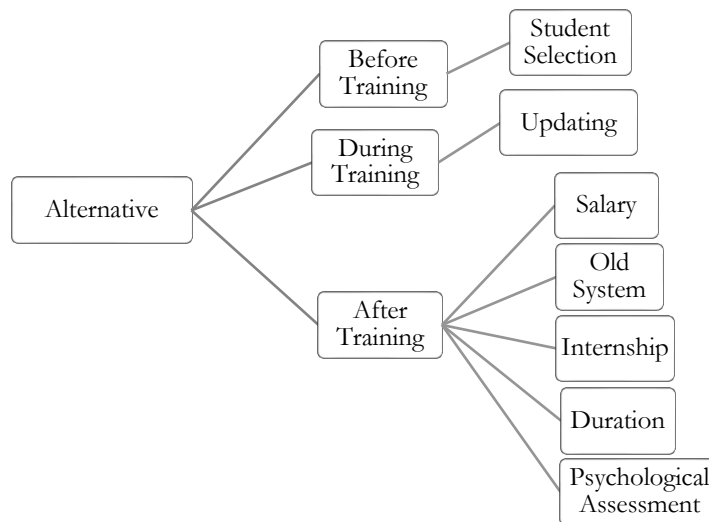


Figure 6. Alternative to the National Education Academy

When Figure 6 is examined, it is understood that social studies teacher candidates made suggestions as alternatives to the National Education Academy in the form of what can be done “before training,” “during training,” and “after training.” In this context, it is seen that the teacher candidates who expressed their opinions in terms of “before training” presented a view for “student selection,” those who expressed opinions about what could be done during training emphasized “updating,” and those who explained their opinions about what could be carried out after training gave responses in the form of “salary,” “old system,” “internship,” “duration,” and “psychological assessment.” When the opinions of the participants are examined in detail, it is understood that the majority of them made suggestions regarding the post-training stage. For each code created based on the responses of the teacher candidates, an example statement is presented below:

Before Training

Student selection. "... I would first admit students to the faculty of education through an interview. There is no need for the Academy anyway. Afterwards, the students would again be appointed with an exam like KPSS..." (P6)

During Training

Updating. "I could suggest that the first three years of university be theoretical education, and the last year be entirely practical courses..." (P9)

After Training

Salary. "Since everyone complains about the salary, it could be raised a little..." (P11)

Old system. "As an alternative, I would prefer it to be done with KPSS scores. I suggest the old system..." (P15)

Internship. "The National Education Academy could have been carried out for students who completed four years by removing the internship. It could have been considered as an internship. I think that would have been more appropriate..." (P22)

Duration. "... I don't know what kind of method I can propose. But at least I think they could shorten the duration a little bit..." (P7)

Psychological assessment. "Instead of AGS, psychological tests should have been applied to teachers. I mean, when I think about today and my childhood, I came across teachers who could not empathize. I am still at university, and most of the time I encounter this situation." (P23)

Focus

The views of social studies teacher candidates on what should be focused in the National Education Academy are presented in Figure 7:

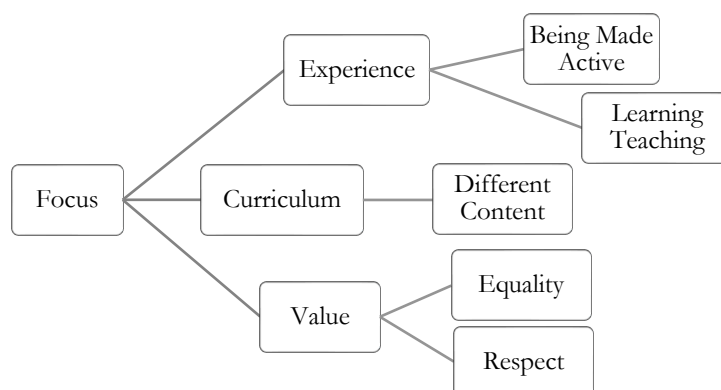


Figure 7. Focus at the National Education Academy

According to Figure 7, social studies teacher candidates stated that the areas to be focused on in the National Education Academy are "experience", "curriculum", and "value". In this regard, it was determined that "experience", they responded with the codes being made "being made active" and "learning teaching"; for "curriculum", they responded with "different content"; and for "value", they responded with "equality" and "respect". When the opinions of social studies teacher candidates are examined in detail, it is revealed that a significant number of them emphasized that they should be made active through a focus on practical training in the National Education Academy and that they want to learn teaching in its full sense. An example statement for each code is presented below:

Experience

Being made active. "In the National Education Academy, they can make me more active..." (P17)

Learning teaching. "... Actually, to teach us how teaching can be done." (P4)

Curriculum

Different content. "I would like there to be somewhat different courses. I want it to contribute more things. For example, focusing on child education and child development not only teaching lessons, but also being able to understand children is important..." (P8)

Value

Equality. "First of all, I expect them to be fair..." (P3)

Respect. "That is, to approach us more respectfully. Rather than just teaching us something, by approaching us more respectfully and moderately, they should add something on top of what we have already learned..." (P13)

Adaptation

The views of social studies teacher candidates regarding their adaptation to the National Education Academy are presented in Figure 8:

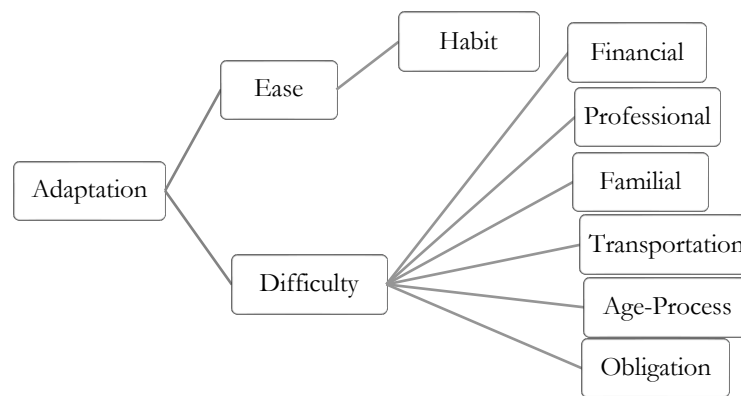


Figure 8. Adaptation to the National Education Academy

When Figure 8 is examined, it is understood that social studies teacher candidates expressed their adaptation to the National Education Academy in terms of "ease" and "difficulty". In this context, it is seen that for "ease" they supported the view of "habit", while for "difficulty" they gave responses coded as "financial", "professional", "familial", "transportation", "age-process", and "obligation". Indeed, it can be said that teacher candidates emphasized that they thought they would face significant difficulties in adapting to the National Education Academy and that they have developed habits within the education system for many years. Example statements for each code emerging from the responses of teacher candidates are presented below:

Ease

Habit. "Yes, I believe I will adapt. Situations that we know, that we are used to... I don't think it will be something I will have difficulty with. Because here we have also received both theoretical and practical education, I don't think it will be very difficult." (P21)

Difficulty

Financial. "Most likely, I will have difficulty at first. Because since it will be in 30 different metropolitan cities, I will be in a place other than my own city. I don't know how accommodation, food, and drink will be handled..." (P14)

Professional. *"I think it will be difficult, because we will be constantly teaching lessons through presentations. So, for me it will probably be a bit tiring..."* (P10)

Familial. *"There will definitely be situations where I will struggle. For example, because I will be separated from my family..."* (P11)

Transportation. *"Maybe since the National Education Academy will be in big cities, it could be a problem in terms of transportation, being in a big city might be an issue..."* (P17)

Age-Process. *"The long duration of the process will make it difficult for me..."* (P25)

Obligation. *"... Since it is compulsory, I have to adapt. I don't have any other option..."* (P6)

Motivation

The motivation levels of social studies teacher candidates toward the National Education Academy are presented in Figure 9:

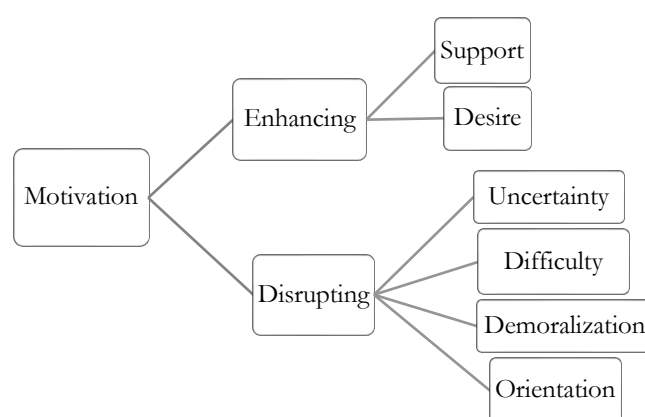


Figure 9. Motivation for the National Education Academy

According to Figure 9, teacher candidates' motivation toward the National Education Academy is divided into two categories: "enhancing" and "disrupting". When examined in detail, it is seen that those with an "enhancing" view responded with the codes "support" and "desire", whereas those with a "disrupting" perspective listed reasons under the codes "uncertainty", "difficulty", "demoralization", and "orientation". As a result, it was found that the National Education Academy both increased and decreased the motivation of social studies teacher candidates. Example statements for each code are presented below:

Enhancing

Support. *"... As far as I know, there was no such practice before. But I think it will be better compared to the previous systems..."* (P5)

Desire. *"I have already wanted the teaching profession since middle school. This is the only profession I want. A person who truly wants this profession will also complete the Academy..."* (P19)

Disrupting

Uncertainty. *"It affected me very negatively. There were even times, like two weeks, when I didn't study at all. Because nothing was clear, everything was uncertain..."* (P3)

Difficulty. *"Yes, it affected me. It became harder and longer to be appointed. It feels like it is becoming impossible..."* (P4)

Demoralization. *"It causes current students in the faculty of education to look at life hopelessly. It also leads both educated and uneducated people around us to put more pressure on teacher candidates..."* (P18)

Orientation. *"Yes, I considered quitting... I am thinking of preparing for a different department..."* (P10)

RESULTS and DISCUSSION

This study aimed to determine the views of social studies teacher candidates regarding the National Education Academy. Following the analyses, it was found that the responses of the students clustered around nine different dimensions. These dimensions were identified as: "approach", "access to information", "need", "necessity", "sustainability", "alternative", "focus", "adaptation", and "motivation". Examination of these dimensions revealed that the teacher candidates expressed opinions on the National Education Academy across a wide range of issues.

The approaches of social studies teacher candidates toward the National Education Academy were categorized into two structures: "positive" and "negative". In particular, participants who supported the Academy emphasized that it could contribute to improving teacher qualifications and expressed satisfaction with the abolition of oral interviews. Similarly, in a study conducted by Gençtürk et al. (2012, p. 1567), it was identified that, according to social studies teacher candidates, an ideal teacher should possess numerous qualities and values. That study highlighted that professional skills and competencies expected from an ideal teacher included: providing quality education and instruction, valuing communication, maintaining discipline, being seen as a role model, loving the profession, and being a good leader and guide. Likewise, according to Harding and Parsons (2011, p. 52), a good teacher should be able to communicate with children, teach the curriculum effectively, and share a love of learning throughout instructional processes.

On the other hand, a considerable proportion of teacher candidates viewed the National Education Academy negatively, arguing that it would impose financial burdens, cause loss of time, complicate the profession, undermine the significance of faculties of education, and create doubts as to whether both themselves and previously appointed teachers had received adequate training. In line with these findings, Karataş (2024, p. 6) also interpreted one of the weakest or most challenging aspects of the National Education Academy as its tendency to disregard higher education institutions, university students, and especially faculties of education. These findings indicate that the approaches of social studies teacher candidates toward the National Education Academy varied considerably and were predominantly characterized by negative perceptions.

In terms of accessing information about the National Education Academy, the categories of "research" and "coincidence" came to the fore. While some teacher candidates reported occasionally engaging with the topic, others stated that they consistently conducted inquiries. Information obtained coincidentally was mostly shaped by exposure to media outlets as well as family and peer networks. Participants explained that they discussed the topic with their families and friends, received various suggestions from them, and often shared similar attitudes. They also emphasized that content encountered on television and social media played a significant role in shaping their perceptions and opinions.

To improve teacher quality, it is first necessary to identify teachers' developmental needs (Moeini, 2008, p. 2). Social studies teacher candidates who participated in this study provided responses regarding why the National Education Academy is needed under the categories of "stalling", "lack of quality", and "improvement". In this regard, those who perceived the Academy as a means of stalling believed it was designed to suspend, delay, or pre-select appointments; those who considered it as a reflection of lack of quality mostly attributed the problem to universities, teachers, and methods; while those who evaluated it in terms of improvement believed that it would help in keeping pace with the innovations of the 21st century and supporting academic development. Similarly, Thomas and Beauchamp (2011, p. 762) stated that teachers could adapt to changes by taking on new roles. In this context, it can be said that teacher candidates who responded in favor of improvement shared a common perspective. A significant portion of the participants expressed positive opinions and sought to explain the need for the Academy in different ways. Considering that teachers, by better understanding effective teaching strategies, could improve and advance their knowledge and thus become highly qualified (Moeini, 2008, p.

2), such views are quite encouraging. However, it was also revealed that some participants defended negative perspectives, arguing that the initiative was launched to suspend or delay teacher appointments.

It was determined that teacher candidates perceived the necessity of the National Education Academy in terms of “deficiency” and “limitation”. In this respect, participants stated that there is currently a deficiency in terms of quality and justice. They also pointed to limitations, noting doubts about the quality of the education they received, a sense of hindrance to their teaching ambitions, and the perception that the process is being extended excessively. From the statements of social studies teacher candidates, it was concluded that although the majority acknowledged a current need, they maintained a negative attitude toward the necessity of the Academy. Thomas and Beauchamp (2011, p. 762) also argued that teachers may face significant challenges in better understanding the scope and integrity of their professional identities. This situation indicates that teacher candidates are experiencing a substantial ambiguity of meaning. Indeed, currently practicing social studies teachers also list financial security, the need to prove themselves, and the desire to teach among their professional expectations (Karalı & Akıncı, 2022, p. 10). In this context, it can be noted that social studies teacher candidates continuing their studies share similar aspirations with in-service teachers.

Participants explained the sustainability of the National Education Academy in terms of “long term” and “possible outcome”. In this regard, some teacher candidates stated that the Academy’s continuity in the long run would depend on certain conditions, while a significant number noted that it would likely end soon due to financial constraints, political reasons, unwillingness, negative reactions, and the repetition of the same training. From these responses, it was determined that most teacher candidates did not believe the National Education Academy would be sustainable. In a study by Köç and Ünal (2018, p. 76), social studies teacher candidates were also found to express uncertainty about the recently announced 2023 Education Vision. Thus, it can be said that social studies teacher candidates have developed a prejudice against the continuity of newly introduced approaches in recent years. In addition, Karataş (2024, p. 7) argued that the assignment system within the National Education Academy would pose challenges in terms of establishing institutional culture and achieving sustainability.

Social studies teacher candidates suggested alternatives to the National Education Academy in three stages: “before training”, “during training”, and “after training”. A few candidates who emphasized the pre-training stage argued that student selection should be conducted through interviews before entering university, so that career choices could be made correctly and negative situations could be avoided in the future. During training, participants suggested that, if necessary, curriculum updates should be made in faculties of education. In the post-training stage, they proposed raising salaries in the new system, shortening the duration somewhat, offering a one-year internship opportunity after graduation, applying psychological tests to teachers instead of the AGS exam, and returning to the old system. A detailed examination of the responses revealed that the majority of participants focused their suggestions on the post-training stage. Similarly, in a study conducted by Demirkaya and Ünal (2017, p. 34), teacher candidates were found to hold predominantly negative views about contracted teaching and the oral examination method used in teacher appointments, while generally expressing that KPSS and ÖABT were sufficient for teacher recruitment. In the present study, too, participants’ satisfaction with the removal of the oral exam system and their demand for appointments to be made based on KPSS scores point to similar results. However, the findings also provide evidence that there is no consensus on the factors that actually enhance—or even indicate—teacher quality (Harris & Sass, 2011, p. 798).

Teacher candidates stated that the areas to be focused on in the National Education Academy were “experience”, “curriculum”, and “value”. Based on their responses, social studies teacher candidates emphasized that they should be made active in order to gain experience and fully learn how to teach, that the curriculum to be prepared should contain content different from their four-year university education, and that in terms of value they should be treated with equality and respect. In this respect, it can be said that debates continue regarding how best to train new

teachers and how to improve the quality of the existing teaching workforce (Harris & Sass, 2011, p. 798). This situation is also reflected in the responses of the students. Similarly, in a study conducted by Gençtürk et al. (2012, p. 1568), it was revealed that social studies teacher candidates believed that an ideal teacher should possess certain values, and it was emphasized that education is the most important tool for promoting value-oriented behaviors.

A detailed examination of the participants' views revealed that the majority emphasized the need to focus on practical training in the National Education Academy so that they could be more active and fully learn teaching. Indeed, in a study conducted by Ünlü et al. (2015, p. 383), it was found that teacher candidates considered the practice courses in the Social Studies Undergraduate Program to be insufficient. Similarly, in Akhan's (2015, p. 284) study, teacher candidates regarded theoretical courses as excessive while finding practice-based courses limited and inadequate. In this context, teacher candidates who advocated for a greater emphasis on practical courses in teacher training programs also reported that, due to insufficient practice, they could not professionally benefit from theoretical courses, and that the knowledge they acquired remained at the level of rote learning. Within the teacher education tradition, it is also emphasized that teachers should acquire the necessary pedagogical skills, instructional technologies, and practical experiences (Moeini, 2008, p. 2).

It was found that teacher candidates described their adaptation to the National Education Academy in terms of "ease" and "difficulty". Some social studies teacher candidates, particularly those emphasizing their habits gained in the university setting, argued that it would be an easy process for them, whereas others noted that they would experience difficulties in financial, professional, familial, transportation, age-process, and obligation-related aspects. On this issue, Karataş (2024, p. 7) highlighted that the salary promised to candidates would not be sufficient to support their living expenses in another city. This interpretation aligns with the reservations expressed by teacher candidates. Thus, it can be said that while some teacher candidates believed they would experience no difficulties in adapting, others anticipated significant challenges in the process.

Participants' motivation toward the National Education Academy was shaped in two different ways: "enhancing" and "disrupting". While those who supported the initiative and who had wanted to become teachers since childhood showed either no change or an increase in their motivation, those who emphasized uncertainty, the difficulty of the process, and the need to shift toward different professional fields reported decreased motivation. From these responses, it was concluded that the National Education Academy both enhanced and reduced the motivation of social studies teacher candidates. Accordingly, it can be stated that social studies teacher candidates chose the teaching profession willingly, that they love and show interest in their future profession (Duman, 2023, p. 87), but that they also experience motivational decline in relation to issues such as job security, the value of the profession, social status, and career opportunities (Recepoglu & İbret, 2019, p. 327). Indeed, in a study conducted by Akhan and Mert (2021, p. 11), it was also found that while social studies teacher candidates expressed concerns about unemployment and the risk of not being appointed, they nevertheless reported that they liked their field and had chosen it with high expectations.

In summary, social studies teacher candidates both supported the National Education Academy and voiced various criticisms regarding it. On the positive side, participants particularly expressed satisfaction with the potential for improving teaching qualifications. On the negative side, however, they complained about financial burdens, the length of the process, time loss, and questioned the necessity of the Academy given the existing faculties of education. It is also noteworthy that participants described the National Education Academy as a waste of time, focused more on the post-training stage, and, while acknowledging its necessity, adopted a negative attitude toward its justification. This reveals that teacher candidates are experiencing a significant conceptual ambiguity regarding the Academy. Especially important is that some participants shaped their perceptions largely through information obtained from their social

environment and media, which appears to be a key reason for this ambiguity. Based on the results of the study, the following recommendations can be made:

- It was found that teacher candidates' knowledge of the National Education Academy was mostly shaped incidentally by their social environment and various media sources. Therefore, informative activities such as seminars and conferences should be organized in faculties of education, and the topic should be included in the content of relevant courses.
- A majority of teacher candidates do not believe that the National Education Academy will be sustainable. Thus, measures should be taken to ensure the continuity of the practice and to counter this perception.
- Some teacher candidates reported that declining motivation might lead them to pursue different fields or even change professions. Motivation-enhancing initiatives should therefore be implemented in faculties of education to prevent this.
- Teacher candidates stated that they developed doubts about the qualifications of the faculty members from whom they received courses after the introduction of the National Education Academy. Accordingly, the rationale behind the Academy should be explained more effectively across various platforms.
- Teacher candidates emphasized that the exclusive presence of the National Education Academy in major cities could pose problems for them. To reduce financial concerns, the initiative should be coordinated across all faculties of education rather than being limited to big cities.

Ethics Committee Approval

Ethical approval for this study was obtained from the Muş Alparslan University Scientific Research and Publication Ethics Committee with the decision dated 10/02/2025 and numbered 1/66.

Author Contribution Rate

The researchers contributed equally to this study.

Declaration of Conflicting Interests

The authors declare that there are no conflicts of interest.

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