Academic Research in Education Sciences

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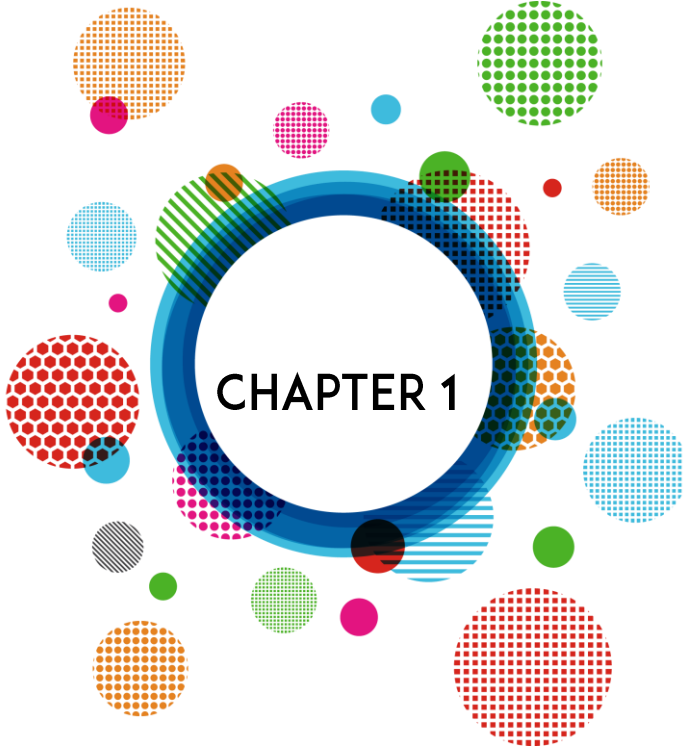
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CONTENTS

CHAPTER 1

Invisible Effects in Education: An Analysis on the Relationship Between Out-of-School Learning and Implicit Curriculum

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INTRODUCTION

Education is not limited to structured information presented in the classroom. Students have many learning experiences both in and out of school, sometimes without realizing it. In this learning process, the values, attitudes, and skills that individuals acquire are sometimes explicitly taught and sometimes acquired through the implicit curriculum. The implicit curriculum encompasses the elements that are not directly included in the official curriculum but are acquired through norms, habits, and sociocultural interactions throughout their educational process (Yıldırım, 2023; Eisner, 1994). For teacher candidates studying in faculties of education, the implicit curriculum plays a critical role in shaping their professional development. This process allows them to both construct their teaching identities and shape their future classroom practices (Kaya & Demir, 2022; McLaren, 1989).

When the professional formation processes of teacher candidates are examined, it is seen that out-of-school learning experiences contribute to this process. While out-of-school learning environments such as museum visits, nature activities, professional observations, and various field studies expand teacher candidates' understanding of education, they also reinforce the skills they have acquired within the framework of the implicit curriculum (Akbulut, 2021; Braund & Reiss, 2004). In the study conducted by Talu (2024), the effect of lecturers' and teacher candidates' tendencies toward implicit curriculum approaches on professional development was revealed. Understanding how the implicit curriculum is shaped, especially in faculties of education, provides an important insight for teacher candidates to develop their professional competencies (Demir & Koç, 2020; Salmi, 1993).

Research examining the relationship between out-of-school learning and implicit curriculum shows that the implicit messages that students and teacher candidates are exposed to during their educational processes significantly affect their learning habits and professional attitudes (Ozdamar, 2024; Jerald, 2006). For example, the academic and social norms that a teacher candidate observes in the faculty environment may cause them to create a similar implicit curriculum in their own classroom environment in the following years. Understanding these implicit effects in education provides important clues for both improving teacher training programs and increasing student achievement (Sahin, 2019; Cornbleth, 1984).

According to research, the implicit curriculum in faculties of education shapes teacher candidates' professional identity development as well as their academic achievements. In the theoretical framework developed by Lynch (1989) on the implicit curriculum, it is stated that the rules and practices that individuals

encounter in the educational process directly affect their learning processes and their understanding of education (Aydın, 2018; Schiro, 2008). Studies by Kabapınar (2015) and Tösten (2020) also emphasize the interaction of out-of-school learning environments and the implicit curriculum in educational processes. In these studies, it was revealed that out-of-school learning activities, as a complement to the formal curriculum, made significant contributions to the professional development of teacher candidates (Kabapınar, 2015; Tösten, 2020).

In another study on the role of the implicit curriculum in teacher candidates' educational processes, Jerald (2006) emphasized that if teachers are aware of the implicit curriculum, their classroom interactions will become more conscious, and students' academic achievement will increase (Jerald, 2006). Similarly, in the context of Vygotsky's (1978) socio-cultural theory, it was stated that learning is in continuous interaction with the individual's environmental factors, and the importance of the implicit curriculum in this context was explained (Vygotsky, 1978).

In this context, examining the relationship between out-of-school learning experiences and the effects of the implicit curriculum on educational processes can make important contributions to studies in the field of teacher education. There is a need for more research on how implicit curriculum practices in faculties of education shape teacher candidates' perceptions of professional competence. Understanding the impact of out-of-school learning activities on teacher candidates will play a critical role in improving their future classroom management approaches and pedagogical practices. In conclusion, increasing the number of studies showing that both the implicit curriculum and out-of-school learning environments are effective in teacher candidates' learning processes will contribute to the development of educational policies. This study aims to reveal the relationship between teacher candidates' level of participation in out-of-school learning activities and their perceptions of the implicit curriculum. At the same time, an in-depth analysis supported by qualitative data as well as quantitative findings will be conducted to make sense of this relationship. The findings of the study are expected to provide suggestions for making teacher education programs more effective (Yılmaz & Arslan, 2022; Myles, Huberman & Saldana, 2004).

The primary objective of this study is to investigate the relationship between teacher candidates' intentions to engage in out-of-school learning activities and their perceptions of the implicit curriculum. Accordingly, the sub-problems of the study are as follows:

Problem Statement:

What is the relationship between teacher candidates' intentions to conduct out-of-school learning activities and their perceptions of the implicit curriculum?

Sub-Problems:

1. Is there a meaningful relationship between teacher candidates' intentions to conduct out-of-school learning activities and their perceptions of the implicit curriculum?

2. Is the perception of implicit curriculum a variable that directly and indirectly affects teacher candidates' intentions to engage in out-of-school learning activities?

3. Do teacher candidates' intentions to conduct out-of-school learning activities and their perceptions of implicit programs differ significantly according to their departments (classroom teaching, preschool teaching, English language teaching, science teaching, social studies teaching)?

4. How do teacher candidates perceive the effects of out-of-school learning activities on their professional development and student achievement?

5. How are teacher candidates' perceptions of the implicit curriculum associated with their out-of-school learning experiences?

METHOD

Research Design and Model

This study employed an explanatory sequential design within the mixed-method research framework. In this approach, quantitative data were first collected and analyzed, followed by qualitative data to provide deeper insights and support the findings (Creswell, 2011). The quantitative analysis utilized Structural Equation Modeling (SEM) to examine direct and indirect relationships between independent and dependent variables (Kline, 2015). For the qualitative analysis, semi-structured interviews were conducted to explore teacher candidates' out-of-school learning experiences and their perceptions of the implicit curriculum (Merriam & Tisdell, 2015).

Study Group of the Research

The study group comprised 347 teacher candidates enrolled at Pamukkale University Faculty of Education. Quantitative data were collected from candidates studying in the departments of Classroom Teaching, Preschool Teaching, English Language Teaching, Science Teaching, and Social Studies

Teaching. In the qualitative data collection phase, 30 teacher candidates were randomly selected from this group for semi-structured interviews.

Table 1. Demographic Distribution of Participants

Section	Quantitative (n=347)	Qualitative (n=30)
Classroom Teaching	85	8
Preschool Education	72	7
English Language Teaching	66	5
Science Teacher Education	64	5
Social Studies Teacher Education	60	5

As observed in the table, all departments were represented in a balanced manner in the quantitative analysis. In the qualitative phase, participant distribution was maintained to ensure data diversity and representation.

Data Collection Tools

The first measurement tool, developed by Karademir and Erten (2013), assesses teacher candidates' intentions to engage in out-of-school learning activities. It consists of 50 items across five sub-dimensions. The reliability coefficient for the scale was 0.89. The second scale, developed by Akbulut and Aslan (2016), consists of 21 items covering three sub-dimensions: Content, Learning-Teaching Process, and Assessment. Its Cronbach Alpha value was 0.88.

The semi-structured interview form, used for qualitative data collection, was designed based on a comprehensive literature review and expert consultation. The interview questions aimed to explore participants' out-of-school learning experiences and their perceptions of the implicit curriculum. Both scales exhibited acceptable reliability levels ($\alpha > 0.80$), confirming their suitability for this study (Field, 2013).

Table 2. Cronbach Alpha Values of the Scales

Scale	Original Cronbach Alpha	In this study Cronbach Alpha
Out-of-School Learning	0.89	0.87
Implicit Program	0.88	0.86

Data Analysis

Quantitative data analysis was performed using SPSS 26 and AMOS 24 software. The relationships between independent and dependent variables were examined using Structural Equation Modeling (SEM).

Descriptive statistics were calculated, including mean, standard deviation, skewness, and kurtosis values. Multivariate normality was assessed using the Mahalanobis distance to identify outliers. Confirmatory Factor Analysis (CFA)

was conducted to validate the factor structures of the measurement tools. The structural model was evaluated using the following fit indices: Chi-square/degree of freedom (χ^2/df): Acceptable if ≤ 3 (Kline, 2015). Root Mean Square Error of Approximation (RMSEA): Acceptable if ≤ 0.08 (Byrne, 2016). Fit Indices (CFI, TLI, GFI, AGFI): Recommended threshold ≥ 0.90 (Hu & Bentler, 1999). Regression coefficients (β) and significance values ($p < .05$) were analyzed to assess hypotheses Qualitative data were analyzed using descriptive analysis. The 30 semi-structured interviews were transcribed and subjected to content analysis to identify emerging themes and patterns.

Data Collection Process and Ethical Considerations

The data collection process lasted four weeks. Quantitative data were obtained through online questionnaire forms, with voluntary participation from teacher candidates. Qualitative data were collected through face-to-face interviews. Participants were provided with informed consent forms, and all ethical guidelines, including confidentiality and anonymity, were strictly followed. All interviews were audio-recorded and transcribed to ensure accurate analysis and credibility in the qualitative findings.

FINDINGS

In this section, the answers to the sub-problems identified within the scope of the research are explored, and interpretations emerging from the findings are presented.

The Relationship Between Teacher Candidates' Intentions to Engage in Out-of-School Learning Activities and Their Perceptions of the Implicit Curriculum

Within the scope of this sub-problem, the relationship between teacher candidates' level of participation in out-of-school learning activities and their perceptions of the implicit curriculum was examined. Pearson correlation analysis was applied to determine the relationship between the two variables.

Table 3. Pearson Correlation Analysis Results

Variables	Permanent Learning	Experiential Learning	Concrete Experiences
Content	0.58**	0.42*	0.37
Learning and Teaching Process	0.65**	0.49**	0.45*
Evaluation	0.53*	0.39	0.41

($*p<0.05$, $**p<0.01$)

When Table 3 is examined, significant relationships at various levels can be observed between the sub-dimensions of the Out-of-School Learning Activities scale and the sub-dimensions of the Implicit Curriculum Perception scale.

There are strong and significant correlations between the content (r=0.58, p<.01), learning-teaching process (r=0.65, p<.01), and assessment (r=0.53, p<.05) sub-dimensions of teacher candidates' long-term learning experiences. This finding indicates that knowledge gained in out-of-school learning environments is related to the fundamental elements of teacher candidates' perceptions of the implicit curriculum.

A positive and significant relationship was found between teacher candidates' experiential learning experiences and the learning-teaching process (r=0.49, p<.01). This suggests that engaging in field studies and outdoor learning activities strengthens their perceptions of educational processes.

Finally, a significant relationship was identified between concrete experiences and the learning-teaching process (r=0.45, p<.05), indicating that direct learning processes play an essential role in shaping teacher candidates' perceptions of course content and the teaching process.

The findings reveal that teacher candidates' participation in out-of-school learning activities is linked to the determinants of their implicit curriculum perceptions. The particularly strong effect of long-term and experiential learning on implicit curriculum perception is noteworthy. These results support the necessity of integrating more out-of-school learning experiences into teacher education programs.

Direct and Indirect Effects of Teacher Candidates' Implicit Curriculum Perception on Their Intentions to Engage in Out-of-School Learning Activities

Within the scope of this sub-problem, structural equation modeling (SEM) was used to analyze the effect of implicit curriculum perception on teacher candidates' intentions to participate in out-of-school learning activities.

Table 4. Structural Equation Model (SEM) Results and Subscale Analysis

Road	Standard Beta (β)	p-value
Implicit Program → Out-of-School Learning	0.48	0.000
Content → Permanent Learning	0.41	0.002
Learning-Teaching Process → Experiential Learning	0.52	0.001
Evaluation → Concrete Experiences	0.39	0.004

| Implicit Program → Out-of-School Learning | 0.48 | 0.000 |

As shown in Table 4, implicit curriculum perception has both direct and indirect significant effects on teacher candidates' intentions to engage in out-of-school learning activities (β=0.48, p<.001). When examined in detail, the 'Content' sub-dimension of Implicit Curriculum Perception has a positive and significant effect on Long-Term Learning (β=0.41, p<.01). The Learning-Teaching Process has an even stronger effect on Experiential Learning (β=0.52, p<.01), while the Assessment sub-dimension significantly influences Concrete Experiences (β=0.39, p<.01). These findings indicate that elements of the implicit curriculum interact with various sub-dimensions in teacher candidates' professional development processes.

The evaluation of the fit indices for the SEM indicates that the model exhibits a good fit (CFI=0.94, RMSEA=0.045, SRMR=0.038, χ^2/df=2.31). This result suggests that the model aligns well with the data. The implicit curriculum perception significantly influences teacher candidates' intentions to participate in out-of-school learning activities (β=0.48, p<.001), highlighting its critical role in shaping their professional development processes and attitudes toward informal learning environments.

Differences in Teacher Candidates' Intentions to Engage in Out-of-School Learning Activities and Their Perceptions of Implicit Curriculum According to Their Departments

To determine whether teacher candidates' intentions to participate in out-of-school learning activities and their implicit curriculum perceptions significantly differ according to their departments, statistical analyses were conducted. First, a Kolmogorov-Smirnov test was applied to assess whether the data met the assumption of normal distribution.

Table 5. Kolmogorov-Smirnov Test Results

Variable	KS Value	p
Out-of-School Learning Activities	0.072	0.200
Implicit Program Perception	0.068	0.205

As observed in Table 5, both variables exhibit p-values greater than 0.05, indicating that the data meets the assumptions required for parametric tests. According to the literature, when p>0.05, normal distribution assumptions are satisfied (Field, 2013). Next, a One-Way Analysis of Variance (ANOVA) was conducted to examine whether significant differences existed in teacher candidates' intentions to participate in out-of-school learning activities across different departments.

Table 6. ANOVA Results for Intentions to Engage in Extracurricular Learning Activities

Section	N	Average X̄	SS	p
Classroom Teaching	70	4.21	0.42	
Preschool Education	65	4.05	0.38	
English Language Teaching	72	3.92	0.44	0.003
Science Teacher Education	69	3.98	0.40	
Social Studies Teacher Education	71	4.10	0.39	

Table 6 indicates a statistically significant difference among departments (p<0.05). The highest mean score was observed in the Classroom Teaching department, while the lowest was found in the English Language Teaching department. This suggests that teacher candidates in some departments exhibit a stronger tendency toward out-of-school learning.

Table 7. ANOVA Results for Implicit Program Perception

Section	N	X̄	Ss	P
Classroom Teaching	70	4.15	0.41	
Preschool Education	65	3.98	0.37	
English Language Teaching	72	3.85	0.42	0.002
Science Teacher Education	69	3.92	0.39	
Social Studies Teacher Education	71	4.08	0.38	

As seen in Table 7, there is a significant difference between the departments in terms of the perception of implicit programs (p<0.05). While classroom instructing students have the highest mean, English language teaching students have the lowest mean. To examine the findings in detail, the post hoc (Tukey) test was applied to analyze which groups had significant differences.

Table 8. Tukey Post Hoc Test Results for Intentions to Engage in Extracurricular Learning Activities

Sections	Difference	p
Classroom Teaching - English Language Teaching	0.29	0.002
Classroom Teaching - Science Teaching	0.23	0.015
Preschool - English Language Teaching	0.18	0.041

According to Table 8, Classroom Teaching students' intentions to engage in out-of-school learning activities are significantly higher than those of English Language Teaching and Science Teaching students. Additionally, Preschool Education students have significantly higher scores than English Language

Teaching students (p<0.05).

Table 9. Tukey Post Hoc Test Results for Implicit Program Perception

Sections	Difference	p-value
Classroom Teaching - English Language Teaching	0.30	0.001
Classroom Teaching - Science Teaching	0.22	0.018
Preschool - English Language Teaching	0.19	0.037

When Table 9 is examined, it is seen that the perceptions of the implicit curriculum among Classroom Teaching students are significantly higher than those of English and Science Teaching students. Additionally, Preschool Education students have significantly higher perceptions than English Language Teaching students (p<0.05).

As a result, the findings indicate significant differences between the departments regarding their intentions to participate in out-of-school learning activities and their perceptions of the implicit curriculum. The perceptions of pre-service teachers towards out-of-school learning and the implicit curriculum vary depending on their fields of study. Specifically, Classroom Teaching and Preschool Teaching departments showed higher averages for these variables.

Pre-Service Teachers' Perceptions of the Effects of Out-of-School Learning Activities on Professional Development and Student Achievement

Within the scope of this sub-problem, pre-service teachers' perceptions regarding the effects of out-of-school learning activities on their professional development were examined using a thematic analysis method.

Table 10.

Table 10. Themes Regarding the Effects of Preservice Teachers' Out-of-School Learning Activities

Theme	Codes	Frequency (f)
Increase in Professional Development	Practical Learning, Observation, Experience, Professional Guidance, Professional Skills	8
Contribution to Student Motivation	Fun Learning, Active Participation, Engagement, Outdoor Experiences, Group Work	6
Transforming Theoretical Knowledge into Practice	Real Experiences, Field Studies, Problem Solving, Project Based Learning	7
Cooperative Learning Skills	Group Work, Social Interaction, Team Coordination, Joint Decision Making	5
Self-regulation and Responsibility for Learning	Independent Study, Time Management, Goal Setting, Self-Learning	4

According to Table 10, pre-service teachers' perceptions of out-of-school learning activities are shaped around different themes. The pre-service teachers stated that these activities significantly contributed to their professional development (f=8). According to pre-service teachers, out-of-school activities provide them with opportunities to apply theoretical knowledge, improve teaching skills, and experience real classroom environments.

For example, one pre-service teacher said, "I had the chance to reinforce the information I learned in the lessons by applying it in out-of-school activities" (TC4), while another stated, "Thanks to these activities, I better understood how theoretical knowledge is useful in practice" (TC5). Additionally, statements such as "The out-of-school learning process played an important role in improving my teaching skills" (TC8) and "I made what I learned more meaningful by experiencing real classroom environments" (TC10) highlight the importance of out-of-school learning in professional development.

Furthermore, out-of-school learning was emphasized as a significant factor in increasing student motivation (f=6). The notion that out-of-school learning environments enhance educational gains for students is noteworthy. One pre-service teacher stated, "Unlike the classroom environment, it was very exciting

for me to see how the subjects I learned worked in the real world" (PT9), while another said, "Students are more active in out-of-school activities and participate more in learning" (PT11). These perspectives emphasize the need for alternative learning environments where students demonstrate more interest and engagement compared to traditional classroom settings.

Another strong theme was the transformation of theoretical knowledge into practice (f=7). Pre-service teachers noted that abstract concepts became more concrete through field studies, observations, and practical applications, reinforcing their learning. Statements such as "We could truly understand the information we learned from books by experiencing it in the field" (TC2) and "Abstract concepts became more concrete for me thanks to field studies" (TC3) underscore the importance of direct learning in supporting theoretical knowledge. Additionally, comments such as "Encountering real-life scenarios helped me improve my problem-solving skills" (TC6) and "I realized that the learning process can be effective not only in the classroom but also outdoors" (TC14) further support this perspective.

Moreover, out-of-school learning was found to contribute to the development of cooperative learning skills (f=5) and self-regulation skills (f=4). The findings suggest that out-of-school learning environments enhance pre-service teachers' independent learning skills by increasing their personal responsibility for learning. For instance, one pre-service teacher stated, "I learned to work more effectively in a group thanks to field studies" (TC6), while another remarked, "I realized that I improved my time management skills" (TC14), highlighting personal development gains.

Prospective Teachers' Views on How They Relate Implicit Curriculum Perceptions to Out-of-School Learning Experiences

In the last sub-problem of the study, a thematic analysis was conducted to understand the relationship between pre-service teachers' perceptions of the implicit curriculum and their out-of-school learning experiences. The themes identified from data collected from 30 pre-service teachers are presented in the table below.

Table 11. Themes Related to Prospective Teachers' Perceptions of Implicit Programs and Out-of-School Learning Experiences

Theme	Codes	Frequency (f)
Educational Awareness	Curriculum Awareness, Academic Outcomes, Practice-Oriented Learning	9
Learning through Experience	Real Life Connection, Role Models, Observation	8
Values Education	Social Sensitivity, Ethical Principles, Responsibility	7
Professional Autonomy	Decision Making, Creativity, Problem Solving Skills	6
Personal Development and Self-Confidence	Self-awareness, Social Cohesion, Leadership	5

Table 11 illustrates how pre-service teachers evaluate out-of-school learning experiences within the framework of their perceptions of the implicit curriculum. The most emphasized theme was educational awareness (f=9). Pre-service teachers indicated that they recognized the curriculum extends beyond textbooks and that academic outcomes align with out-of-school learning experiences. One pre-service teacher remarked, "My interest in learning increased as I realized that the course content was related to real life" (PT3), while another stated, "By experiencing what I learned in the field, I better understood how the curriculum was implemented" (PT7).

The theme of learning through experience was also frequently highlighted (f=8). Pre-service teachers emphasized that observation and real-world connections helped them understand educational processes. "We had the opportunity to reinforce the information we learned in theory by observing it in out-of-school activities" (TC11) illustrates this point. Another pre-service teacher stated, "Observing expert teachers gave me clues about what kind of teacher I want to be in the future" (TC19).

The themes of professional autonomy (f=6) and personal development (f=5) were also discussed. It was noted that out-of-school learning experiences improved decision-making, creativity, and problem-solving skills. "I had the opportunity to take initiative by making independent decisions in various activities" (TC14) supports this idea. Additionally, pre-service teachers who developed self-confidence mentioned, "I started to communicate more easily with students by improving my social skills" (TC27).

Overall, pre-service teachers stated that out-of-school learning experiences

significantly contributed to their understanding of the implicit curriculum. Elements such as educational awareness, learning through experience, and values education play a crucial role in shaping pre-service teachers' professional perspectives. The findings suggest that the implicit curriculum should be reinforced not only through classroom practices but also through out-of-school learning processes.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

In this study, the relationship between teacher candidates' participation in out-of-school learning activities and their perceptions of the implicit curriculum was examined. The findings indicate that these two variables are interrelated. The quantitative data suggests that out-of-school learning processes enhance the visibility of implicit curriculum elements and increase pedagogical awareness. The qualitative findings highlight that teacher candidates perceive these experiences as significant contributors to their personal and professional development. Prior research supports the notion that active involvement in out-of-school learning fosters the practical application of theoretical knowledge and strengthens professional competencies (Bostan Sarıoğlan & Küçüközer, 2017; Bozdoğan, 2012; Çengelci, 2013; DeWitt & Osborne, 2010). Accordingly, it is recommended that teacher education programs integrate strategies to enhance candidates' awareness of learning processes (Eshach, 2007; Haji, Yumiati & Zamzaili, 2019). Gaining field-based experiences enables teacher candidates to better understand implicit learning components and adopt a more conscious approach to classroom practices (Özdamar & Şahin, 2024).

The participation of teacher candidates in out-of-school learning activities not only strengthens their professional competencies but also positively influences their interactions with students. Exposure to real-life learning contexts enhances their ability to apply theoretical knowledge. These findings align with prior studies, indicating that teacher candidates involved in out-of-school learning internalize their education programs more effectively and develop a heightened sense of professional competence (Creswell & Kline, 2015). This outcome underscores the importance of experiential learning in teacher training.

Additionally, the results reveal that participation in out-of-school learning activities fosters greater sensitivity to implicit learning processes. Research suggests that adopting an experience-oriented learning model, rather than focusing solely on formal education, enables teacher candidates to better comprehend implicit curriculum elements (Derya Kavgaoğlu & Seval Fer, 2020). Studies examining implicit learning experiences further confirm that field studies

and out-of-school activities reinforce implicit learning (Kesici, 2010; Adıay, 2011; Akbulut, 2011; Başar, 2011; Filiz, 2011; Sezen, 2011; Çengel, 2013; Fidan, 2013; Tor, 2015; Yıldırım, 2015; Akbulut, 2016; Aktaş, 2016; Akçakoca, 2018; Özaslan, 2019). Based on these findings, it is evident that out-of-school learning environments should be more prominently integrated into teacher education programs.

Considering this study's findings, it is recommended that teacher education programs be restructured to provide candidates with increased field experience. Teacher candidates should be encouraged to actively participate in out-of-school learning activities, and these experiences should be embedded into education programs. Moreover, targeted training should be developed to enhance candidates' awareness of implicit curriculum elements, and further academic research should be conducted on this topic. Future studies should employ longitudinal designs with larger samples to explore how out-of-school learning processes impact teacher candidates' professional development over time.

In conclusion, this study highlights that teacher candidates' engagement in out-of-school learning activities and their perceptions of the implicit curriculum are mutually reinforcing. Increased exposure to these experiences will contribute to their professional growth and broaden their perspectives on the learning process. To maximize these benefits, policymakers and educators should consider integrating structured out-of-school learning opportunities into teacher preparation programs, ensuring that future teachers are equipped with a diverse range of pedagogical skills.

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CHAPTER 2
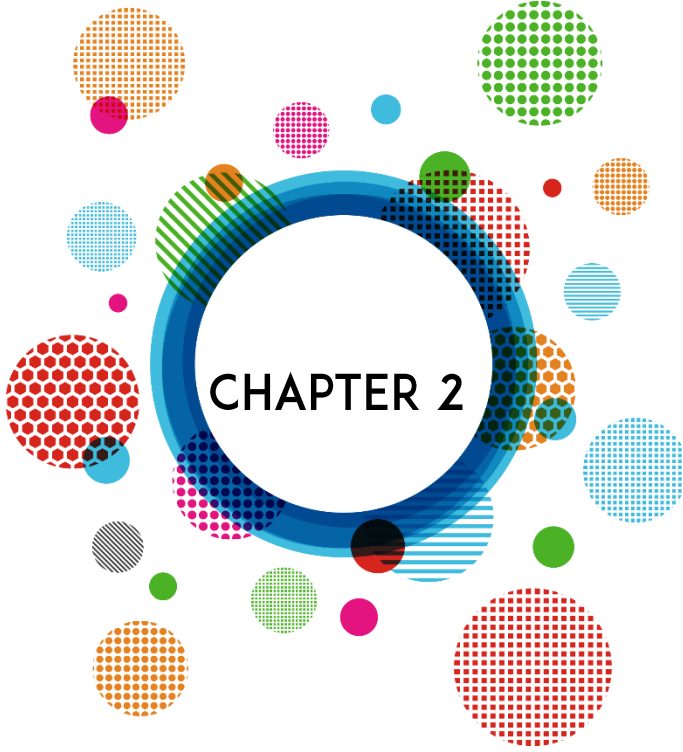
A Longitudinal Study On the Burnout of Social Studies Teachers Working With Students With Specific Learning Disabilities

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Introduction

Burnout in the workplace refers to the manifestation of symptoms such as emotional exhaustion, a sense of personal failure, and alienation from others as a result of individuals' inability to cope with prolonged work-related stress (Maslach, 2017). Individuals experiencing burnout are also prone to health issues such as chronic pain and depression (Armon et al., 2010) and may face negative outcomes such as absenteeism and job turnover (Dunford et al., 2012). Teaching is considered a profession with a high prevalence of burnout (Johnson et al., 2005), and teachers experiencing burnout often report difficulties related to their health and overall well-being (Schonfeld & Bianchi, 2016).

Teachers working with special education students are at a higher risk of burnout due to the unique nature of their work (Brunsting et al., 2022). In addition to their other job responsibilities, factors such as excessive paperwork, planning, curriculum deficiencies, and the discrepancy between expectations and reality contribute to an increased risk of burnout among special education teachers (Bettini et al., 2020). Teachers experiencing burnout are more likely to leave their jobs, which can lead to a less experienced and inadequately trained teaching workforce (Billingsley & Bettini, 2019; Billingsley et al., 2020). Furthermore, burnout negatively affects teachers' interactions with their students, reduces the likelihood of achieving Individualized Education Program (IEP) goals, and results in lower academic performance (Irvin et al., 2013; Oakes et al., 2021; Wong et al., 2017). Burnout can also impair teachers' job performance, as emotional exhaustion and overall burnout reduce the effectiveness of classroom and school-level interventions and lead to a decrease in the use of evidence-based teaching methods (Cumming et al., 2021; Jones & Youngs, 2012; Madigan & Curran, 2020; Park & Shin, 2020). Consequently, teacher burnout has long-term negative effects on both educators and students.

Although research in this area is limited, social studies teachers serving students with specific learning disabilities tend to be at the highest risk of burnout (Domitrovich, 2015; Nichols & Sosnowsky, 2002). Teachers working with students with specific learning disabilities often have less experience than other teachers (Billingsley et al., 2006), and burnout is frequently associated with inadequate preparation or experience in effectively managing student behavior (Garwood et al., 2018). In addition, working conditions (e.g., planning time and colleague support) are also significant factors, as these teachers often report challenging working conditions (Lane et al., 2020; O'Brien et al., 2019), which are closely linked to emotional exhaustion.

However, recent research offers some solutions to reduce teacher burnout. In a national study on teachers serving special education students, Bettini and colleagues found that adequate planning time, curriculum resources, administrative support, and training for support staff made teachers' workloads more manageable, reduced emotional exhaustion, increased their willingness to stay in the profession, and led to more frequent use of evidence-based teaching methods (Cumming et al., 2021; Saloviita & Pakarinen, 2021). Garwood et al. (2018) examined the relationship between burnout and the role perceptions and classroom management self-efficacy of such teachers working in rural areas. Teachers who experienced lower role conflict (e.g., conflicting job demands), less role ambiguity (e.g., unclear job expectations), and greater self-efficacy in classroom management were less prone to burnout.

As research on the well-being and burnout of special education teachers continues to grow, understanding the development and fluctuations of teacher burnout over time, particularly throughout the academic year, is essential for guiding future interventions and supporting preventive measures. However, there is a notable gap in longitudinal studies examining burnout specifically among social studies teachers who provide special education services, as well as a general lack of longitudinal data on teacher burnout (Bettini et al., 2020; Hultell et al., 2013). While research on teacher burnout over time has typically shown an increase in burnout levels (Frank & McKenzie, 1993), there is no research specifically addressing changes in burnout among social studies teachers delivering special education services throughout the school year.This study aims to fill this gap by examining changes in burnout throughout the academic year and seeks to answer the following research questions based on a national sample of social studies teachers serving students with specific learning disabilities:

1. Do social studies teachers serving students with specific learning disabilities experience higher levels of burnout compared to other teachers?

2. Does burnout among social studies teachers serving students with specific learning disabilities change over time?

3. How do the dimensions of burnout among social studies teachers serving students with specific learning disabilities relate to each other over time?

Dynamic Dimensions: Burnout Theory

This study is shaped by the theories of Maslach and Schaufeli (2017) and Brunsting et al. (2022), which conceptualize burnout as a dynamic construct. Burnout is a condition that develops when individuals' coping resources become

overwhelmed due to prolonged work-related stress and is typically experienced in professional settings. Individuals suffering from burnout encounter challenges across three primary dimensions: depersonalization, emotional exhaustion, and a sense of diminished personal achievement. Emotional exhaustion is characterized by the sensation of being mentally and physically depleted, making it difficult to fulfill one's responsibilities effectively. For special education teachers, this may manifest as decision-making fatigue in routine tasks such as managing Individualized Education Programs (IEPs) or a lack of energy for self-care (Ansley et al., 2016; Bettini et al., 2021). Depersonalization involves emotional detachment or cynicism toward others in the workplace. In the case of special education teachers, this may be reflected in ignoring students' questions, problematic behaviors, or engagement efforts (Garwood et al., 2018). A lack of personal accomplishment emerges when an individual loses their sense of meaning, success, and competence in their work. Special education teachers experiencing burnout may feel that their efforts are futile or that they are constantly facing systemic barriers (Ansley et al., 2016; Garwood et al., 2018). Burnout is a dynamic phenomenon that changes over time, depending on job demands and available resources (Hobfoll & Freedy, 2017; Mathews et al., 2021). However, longitudinal research on burnout is limited, with most studies being cross-sectional in nature (Brunsting et al., 2022). Longitudinal burnout studies outside the field of education have shown that burnout remains stable for individuals working in the same position for years, whereas burnout among newcomers is more dynamic (Dunford et al., 2012). Hultell et al. (2013) examined burnout among novice teachers over three years and identified seven different trajectories, six of which changed over time. Another study examined burnout among 41 novice special education teachers and observed an increase in burnout over time (Frank & McKenzie, 1993), though statistical significance was not tested. While this research serves as an important starting point, changes in the roles of special education teachers—such as increasing accountability policies and the inclusion of students with disabilities (Brownell et al., 2018; Maslach & Schaufeli, 2017)—necessitate the continuation of such studies in the current context. Additionally, future research should address the limitations of previous studies, including sample size and statistical significance testing.

The Interaction of Burnout Dimensions Over Time

Burnout is a dynamic phenomenon, and its individual dimensions can strongly predict themselves over time. For example, a person's personal success in their job is a strong indicator of future personal success in that position (Maslach, 2017). However, the way burnout dimensions interact with each other over time

has been less frequently studied (Maslach, 2017). van Dierendonck and colleagues (2001), in a meta-analysis of five studies conducted with teachers, healthcare workers, and managers, used structural equation modeling to test the relationships between the emotional exhaustion, depersonalization, and personal accomplishment dimensions of burnout. The most fitting model for the data was as follows: (a) Time 1 emotional exhaustion predicted Time 2 emotional exhaustion and Time 2 depersonalization, (b) Time 1 depersonalization predicted Time 2 depersonalization and Time 2 personal accomplishment, and (c) Time 1 personal accomplishment predicted only Time 2 personal accomplishment. Brunsting et al. (2022) examined these relationships among educators and conducted the study to explore how these dimensions interacted with each other among special education teachers serving students with emotional behavior disorders.

Comparison of Burnout in General Education Teachers and Teachers Providing Special Education Services

The burnout levels may differ between general education teachers and teachers providing special education services. Teachers providing special education services encounter many burnout factors throughout their professional lives. These include heavy workloads (Bettini et al., 2020; Cumming et al., 2021), excessive paperwork (Vannest & Hagan-Burke, 2010), challenging student behaviors (Hastings & Brown, 2002), insufficient preparation for core duties (Garwood et al., 2018), and the mismatch between job expectations and reality (Bettini et al., 2019). A study by Jones and Youngs (2012), conducted on 42 new teachers, found that during the spring months, teachers providing special education services experienced higher levels of burnout compared to general education teachers. However, this is the only study that directly compares the two teacher groups in the U.S. In order to expand on the existing knowledge and address this gap, Brunsting et al. (2022) analyzed the burnout levels of special education teachers by comparing them to the norm group of the scale used (n = 4,163; Maslach et al., 1996). In this study, Brunsting et al. (2022) referenced the previous work and analyzed the burnout of social studies teachers in the education of students with learning disabilities.

Purpose

The aim of this study is to create a national sample randomly selected by region, consisting of social studies teachers providing education to students with specific learning disabilities during the 2013-2024 academic year. By administering surveys at three different time points during one academic year, the

study aims to observe the changes in teachers' burnout levels over time and compare the burnout levels of social studies teachers serving students with specific learning disabilities to the national norms established for teacher burnout. The data collection process of the research occurred in three phases. The first phase (Time-1) started on November 15, 2023, and ended on December 15, 2023. The second phase (Time-2) started on January 15, 2024, and ended on February 15, 2024. The third phase (Time-3) started on April 15, 2024, and will end on May 15, 2024. This study was based on the predetermined data analysis plan and additionally reported any changes occurring in practice while adopting an ethical and responsible scientific approach (Lane et al., 2021).

Method

Participants

The study participants consist of 189 social studies teachers who serve students with specific learning disabilities in 125 schools across 7 regions of Turkey. For demographic information about the participants, see Table 1. Participant characteristics in terms of gender and experience are similar to those of a recent national sample of social studies teachers serving students with specific learning disabilities in content-limited environments.

Table 1. Demographic Information of Participants

Category	n	%
Gender		
Female	126	66.67
Male	63	33.33
Region		
Eastern Anatolia	19	10.05
Southeastern Anatolia	17	8.99
Black Sea	21	11.12
Mediterranean	30	15.87
Marmara	37	19.58
Central Anatolia	34	17.99
Aegean	31	16.40
Educational Level		
Bachelor's	148	78.31
Master's	39	20.63
Doctorate	2	1.06
Certification		
No	19	10.05
Yes	170	89.95
Service Delivery Model		
Resource Room	64	33.86
Inclusion/Integrated Classroom	125	66.14
Grade Level		
Middle School	189	100
School Type		
General Education/Neighborhood School	189	100

Prosedür

After obtaining permissions from the relevant units, the data collection process of the study was carried out in three phases. The first phase (Time-1) started on November 15, 2023, and ended on December 15, 2023. The second phase (Time-2) started on January 15, 2024, and ended on February 15, 2024. The third phase (Time-3) started on April 15, 2024, and will end on May 15, 2024.

Sampling and Regional (District) Participation

A sampling framework was created by downloading school information at the regional level from the Ministry of National Education's Educational Statistics. There are seven regions across the country. The number of teachers and schools to be selected from each region was determined (see Table 1). A random number was generated for all regions, and a total of 125 schools with the highest numbers in each region were selected as the sample. The research team contacted the school administrators of the sampled schools via email and phone, and completed regional research applications when necessary. Schools that declined participation were replaced by backup schools, and the same communication protocols were applied. To contribute to the participating schools, it was offered to share a comparative report of the research results, publications, and a national sample with the schools of the participating regions (to ensure confidentiality). The data for this study were obtained from the primary participation wave. In this wave, all regions agreed to participate, and all seven regions joined the study. Thus, the regional participation rate was 100%. However, schools from some regions (a total of 12 schools) refused to participate. The participating regions were geographically distributed as shown in Table 1 (see Table 1). This distribution closely resembles the regional distribution statistics in Turkey.**

Selection of Teacher Participants

The researcher identified Social Studies teachers who provide services to at least one student diagnosed with a specific learning disability. An electronic file containing the names of these teachers, their regional email addresses, and their schools was provided. This teacher information was uploaded to the database and the Google Forms online survey platform. Before sending the Google Forms email, school administrators were asked to send an email confirming their support for the study.

Teacher Invitation Process

The first email sent via Google Forms included information about the study

and a link to an informed consent letter. The consent form also included an invitation to attend webinars to discuss the study's results. Teachers were asked two questions: whether they are a social studies teacher serving students with specific learning disabilities, and whether they agreed to participate in the study. Those who answered "yes" to both questions were automatically directed to the online survey. Teachers who answered "no" to at least one question were thanked and the session was closed.

Follow-up Process for Teachers Who Did Not Respond

A second email was sent one week after the first email to those who did not respond. Teachers who still did not respond were replaced with a different teacher and an invitation was sent. The teacher participation and response rate was 83.59% (438/524).

Measurement Tools

Demographic Information Form

The demographic questions included information such as teacher gender, certification, education, service delivery model, school level (e.g., middle school), and school status. The gender response options were multiple-choice and fill-in-the-blank (for participant demographic information, see Table 1).

Burnout Inventory–Educator Scale

The 22-item Maslach Burnout Inventory–Educator Scale (MBI-ES; Maslach et al., 1996) was used to measure burnout. The scale includes three subdimensions: emotional exhaustion (nine items), depersonalization (five items), and personal accomplishment (eight items). Example items are: "I feel emotionally drained by my work," "I treat my students as if they were objects," and "I manage my students' problems effectively." Teachers provided their responses on a 7-point Likert scale, with ratings ranging from 0 (never) to 6 (every day). Higher scores indicate greater emotional exhaustion, depersonalization, and personal accomplishment. In this study, the Cronbach alpha values for the subdimensions ranged from .66 to .92, with depersonalization falling below the recommended threshold of .70. However, since a reliability range between .60 and .70 for depersonalization is commonly accepted, this dimension was retained, consistent with previous research.

Data Analysis

The data were assessed for deviations from univariate and multivariate normality in preparation for t-tests, analysis of variance (ANOVA), latent growth

curve modeling (LGCM), and structural equation modeling (SEM). Some items exceeded the recommended thresholds for skewness and kurtosis ($+/-$ 5; Bowen & Guo, 2012). Logarithmic and Box-Cox transformations were considered to address skewness. Since the means of the constructs and the parcels used in LGCM or SEM showed no skewness, no transformations were applied. Furthermore, none of the Mahalanobis values exceeded .001, indicating the absence of multivariate outliers. To investigate the impact of burnout on survey completion (Chen & Han, 2020), Welch's t-tests were performed to determine if teachers who completed the survey at later time points reported lower burnout in earlier periods. The initial significance level for multiple comparisons was set at $p < .0132$ $(.05/(6 - 2))$, and the subsequent significance threshold was $p < .0159$ $(.05/(5 - 2))$. The results indicated that participants who completed the survey in Time-2 had significantly higher emotional exhaustion levels in Time-1 compared to those who did not complete the survey in Time-2 (28.80 vs. 24.29, $\Delta M = 4.21$, $t = 2.51$, $p = .011$, $g = .39$).

To compare burnout levels in Time-1 with a national sample, Welch's t-tests were used due to their robustness against sample size differences. Paired t-tests were conducted to examine whether burnout levels varied across time points. The Holm–Bonferroni correction was applied to control for family-wise error rate, and the Holm Step-Down Procedure was followed for all t-tests. Hedges' g effect sizes were calculated for each t-test.

Before performing LGCM or cross-lagged panel SEM to analyze the burnout trajectory of social studies teachers over time, Little's MCAR test was conducted for participants who completed the survey at all three time points. The test did not yield a significant result ($p = .095$), suggesting that the data were missing at random. Consequently, missing data were imputed using Full Information Maximum Likelihood (FIML) for both LGCM and SEM. After confirming that the covariance coverage values exceeded .11, including the 12 participants who did not provide data at Time-3 due to research interruptions from their schools, missing data were imputed for longitudinal structural analyses to reduce the risk of generalization errors (Little, 2013).

The intraclass correlation coefficient (ICC) was calculated to assess the percentage of variance explained by schools, with no ICC exceeding .11 (range = 0%–7.56%, with only two values >2%). As a result, clustering by schools was not included in the analyses, as simulations with fewer than 50 groups can lead to biased standard error estimates (Hox & Maas, 2002). To maintain a case-to-item ratio greater than 5:1 (Kline, 2016), three random parcels were created for each burnout dimension at every time point (Little, 2013). Measurement validity

was checked, and the models were confirmed to pass both configurational and weak validity tests. Strong validity was not expected, given the anticipated mean differences over time. The model was considered valid when the root mean square error of approximation (RMSEA) 90% confidence interval (CI) and the comparative fit index (CFI)/Tucker–Lewis index (TLI) were within .01, according to the guidelines of Hu and Bentler (1999). LGCM and SEM analyses were performed using Mplus software (Muthén & Muthén, 2020). When LGCM models did not meet good fit criteria (e.g., entropy >.70), a cross-lagged panel SEM model was employed to explore emotional exhaustion, depersonalization, and personal accomplishment over the academic year. Initially, a SEM model with all parameters was tested, and non-significant parameters were constrained to achieve the best fit. Model fit quality was assessed according to Hu and Bentler's (1999) recommendations: RMSEA <.06, CFI/TLI >.95, and standardized root mean square residual (SRMR) <.08.

Findings

To better understand the burnout among social studies teachers serving students with specific learning disabilities, a national survey was conducted in the country, and the hypotheses proposed for the study were tested.

Comparison of Burnout with the National Total Sample by Region

Table 2. Difference in Burnout Compared to the National Sample

Measurement	Study Sample (N = 177)	National Sample (N = 4089)	t	p	g
Emotional Exhaustion					
Time-1 Total Mean (SD)	28.39 (11.84)	23.31 (11.21)	6.32	.000	.57
Depersonalization					
Time-1 Total Mean (SD)	6.08 (5.41)	11.24 (6.23)	-14.48	.000	.92
Personal Accomplishment					
Time-1 Total Mean (SD)	41.80 (7.03)	34.55 (7.01)	11.05	.000	.60

Using Welch's t-test, the burnout levels of social studies teachers serving students with specific learning disabilities at time-1 were compared with the national middle school teacher sample (n = 4089; Maslach et al., 1996). The results revealed significant differences in each burnout component (Table 2): Social studies teachers exhibited higher emotional exhaustion (28.39 vs. 23.31, $\Delta M = 6.12$, t = 6.32, g = .57), lower depersonalization (6.08 vs. 11.24, $\Delta M = -4.98$, t = −14.48, g = .92), and higher personal accomplishment (41.80 vs. 34.55, $\Delta M = 5.03$, t = 11.05, g = .60).

Examining the Change in Burnout Over Time

Repeated measures t-tests were performed to assess changes in burnout over time, with the initial significance threshold set at $p < .0071$ $(.05/(9 - 2))$ to adjust for multiple comparisons. Results showed a significant decrease in emotional exhaustion from Time-1 to Time-2 and from Time-1 to Time-3, while personal accomplishment significantly increased from Time-2 to Time-3 (see Table 3).

Table 3. Examining Burnout Over Time

Measurement	Time-1	Time-2	t	p	d
Emotional Exhaustion	29.02 (11.52)	27.25 (12.68)	-2.91	.005	.26
Depersonalization	5.92 (5.46)	5.86 (5.19)	-0.37	.735	.04
Personal Accomplishment	38.67 (6.72)	41.30 (7.01)	-0.97	.384	.08
Measurement	Time-2	Time-3	t	p	d
Emotional Exhaustion	27.25 (12.32)	26.12 (12.30)	-2.27	.027	.22
Depersonalization	5.65 (5.03)	5.69 (4.97)	0.11	.916	.01
Personal Accomplishment	38.50 (5.55)	39.87 (5.78)	3.11	.001*	.30
Measurement	Time-1	Time-3	t	p	d
Emotional Exhaustion	28.15 (11.94)	24.94 (13.36)	-4.39	.000*	.41
Depersonalization	5.48 (4.91)	5.36 (4.99)	-0.50	.614	.05
Personal Accomplishment	38.98 (6.01)	41.10 (5.64)	2.51	.018	.24

Note. "To account for multiple comparisons, the Holm-Bonferroni correction was applied, setting the initial significance level at $p < .0071$ $(.05/(9 - 2))$ and the next significance level at $p < .0083$ $(.05/(8 - 2))$, and so on. Time-1 = Fall; Time-2 = Winter; Time-3 = Spring. *Represents a significant probability at the adjusted level."

The model revealed eight significant direct effects and five significant indirect effects (see Table 4). Each dimension predicted the same dimension at the next time point. *Additionally, Time-1 emotional exhaustion was positively associated with Time-2 depersonalization, and Time-2 personal accomplishment shared a negative relationship with Time-3 depersonalization. The indirect effect of Time-1 personal accomplishment on Time-3 depersonalization (b = −.15, p = .031) was fully mediated by T2 personal accomplishment.* Moreover, Time-1 emotional exhaustion had a significant indirect effect on Time-3 depersonalization (b = .23, p = .008) (see Figure 1).**

Table 4. Direct and Indirect Effects of the Final Structural Model for Burnout Constructs

Note. DP = Depersonalization; EE = Emotional Exhaustion; PA = Personal

Path	*b**	SE	%95 CI	*p*
Direct Effects				
Time-1 EE → Time -2 EE	0.91	0.04	[0.90, 0.91]	.000***
Time -2 EE → Time -3 EE	0.91	0.04	[0.90, 0.91]	.000***
Time -1 EE → Time -2 DP	0.47	0.16	[0.45, 0.49]	.001**
Time -2 DP → Time -3 DP	0.67	0.09	[0.60, 0.74]	.000***
Time -1 PA → Time -2 PA	0.84	0.06	[0.72, 0.96]	.000***
Time -2 PA → Time -3 PA	0.79	0.07	[0.65, 0.94]	.000***
Time -1 EE → Time -2 DP	0.39	0.15	[0.12, 0.66]	.007**
Time -2 PA → Time -3 DP	-0.22	0.09	[-0.36, -0.08]	.030*
Indirect Effects				
Time -1 EE → Time -2 EE → Time -3 EE	.76	.04	[.64, .87]	.000***
Time -1 DP → Time -2 DP → Time -3 DP	.29	.11	[.09, .49]	.004**
Time -1 PA → Time -2 PA → Time -3 PA	.65	.07	[.45, .85]	.000***
Time -1 EE → Time -2 DP → Time -3 DP	.23	.09	[.08, .39]	.008**
Time -1 PA → Time -2 PA → Time -3 DP	−.15	.08	[−.28, −.02]	.031*

Accomplishment; Time-1 = Fall; Time-2 = Winter; Time-3 = Spring. *p < .05, **p < .01, ***p < .001.
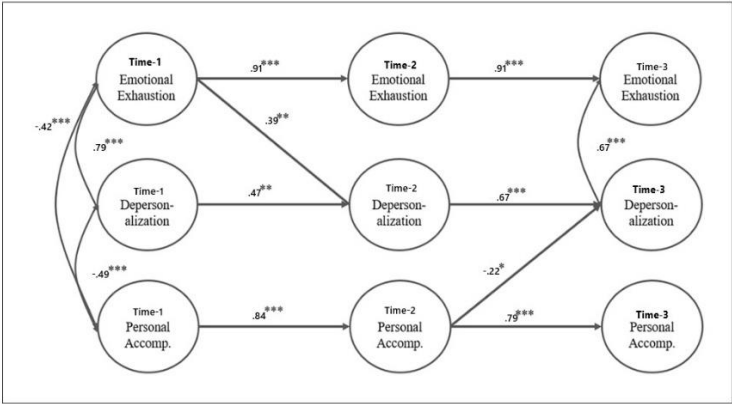

Figure 1. Final Cross-Lagged Longitudinal Panel Structural Model

Discussion

In a study conducted to understand the burnout levels of social studies teachers working with students with specific learning disabilities, the burnout levels of these teachers were compared with a national sample using the Maslach Burnout Inventory (MBI). The results showed that social studies teachers working with students with specific learning disabilities reported higher emotional exhaustion, lower depersonalization, and higher feelings of personal accomplishment. These findings partially support some of the hypotheses, while others are only partially supported. The study examined changes in burnout levels of social studies teachers at three different time points over the course of an academic year. As hypothesized, a decrease in emotional exhaustion and an increase in personal accomplishment were observed. However, no change in depersonalization levels over time was found. The study also examined the relationships between the dimensions of burnout over time. It was found that each burnout dimension predicted itself at subsequent time points. For example, high emotional exhaustion in Time-1 predicted high emotional exhaustion in Time-2 and Time-3. Additionally, high emotional exhaustion in Time-1 was associated with high depersonalization in Time-2, and high personal accomplishment in Time-2 was linked with high depersonalization in Time-3. These findings indicate that social studies teachers working with students with specific learning disabilities experience higher emotional exhaustion compared to the general teacher population, but engage in more interaction with their students and have a strong sense of personal accomplishment.

Implications for Researchers

The research findings show that by the end of the academic year, social studies teachers working with students with specific learning disabilities experienced a reduction in emotional exhaustion and an increase in their sense of personal accomplishment. This suggests that increased interaction with students and school environments may help reduce burnout. Given the negative effects of burnout on both teachers and students, these findings are promising. However, previous research by Frank and McKenzie (1993) indicates that teachers often experience increasing burnout levels over time. This discrepancy may stem from various factors, and further research is needed. For example, as Dunford et al. (2012) noted, burnout may increase over time for individuals who have been in the same position for a long period. Additionally, as teachers strengthen their relationships with students and colleagues throughout the school year, this may help them manage the demands of their job more effectively. Similarly, teachers who have more opportunities to observe the development of their students may

experience an increased sense of personal accomplishment. A deeper understanding of the mechanisms underlying these positive changes could provide more insights into how burnout develops or decreases and contribute to the development of effective intervention strategies.

Future research would benefit from similar analyses with other teacher groups working in special education. As Dunford et al. (2012) suggested, burnout may follow a more dynamic trajectory in the early stages of teachers' careers. Therefore, studies with first-year teachers would be particularly useful in determining how burnout develops in the early career stages and when interventions should be implemented. Furthermore, monitoring burnout levels during the first 3 to 5 years of a teacher's career could provide more detailed insights into preventing burnout, especially considering that approximately 60% of teachers leave the profession during this period (Theobald et al., 2020). Previous research (Jones & Youngs, 2012) suggests that teachers of students with learning disabilities may experience higher emotional exhaustion compared to general education teachers. The findings of this study support this result but also indicate that our participants reported a stronger sense of personal accomplishment and lower depersonalization compared to the national teacher sample. Future research could illuminate factors that support teachers in preventing the experience of burnout and its components in this field.

Implications for Practitioners

Social studies teachers serving students with specific learning disabilities experience higher levels of emotional exhaustion compared to the national teacher sample, with burnout typically peaking in the early months of the academic year. This suggests that teachers could benefit from support provided at the beginning of the school year. It is crucial for administrators to enhance resources that help teachers manage the challenges of working with students with specific learning disabilities. Additionally, it is recommended that administrators implement well-being-focused professional development programs at the start of the academic year to prevent burnout. Such programs can help teachers develop coping strategies for managing stress.

In Turkey, the Ministry of National Education's Psychosocial Support Programs aim to reduce teachers' stress symptoms and enhance their psychological resilience. These programs teach various cognitive-behavioral techniques, such as positive self-talk, reflective problem-solving, setting boundaries, self-monitoring, and expectation management. For example, teachers can acknowledge that feelings of burnout at the beginning of the year are natural,

reflect on their past successes, and reassess both their own competencies and their students' potential for achievement. During this process, it is important for teachers to manage their expectations and recognize that success develops gradually throughout the academic year.

In conclusion, administrators are encouraged to implement programs at the beginning of the school year that support teachers in developing stress management skills and to provide ongoing, on-the-job support to all teachers educating students with special needs.

Limitations and Future Directions

This study is the first longitudinal research examining the burnout levels of social studies teachers working with students with specific learning disabilities, using a national sample. However, there are some limitations that should be considered when interpreting the results:

Sample Distribution: The distribution of participants across regional sizes in the country differs from national averages. This may create limitations in the generalizability of the results. Therefore, it is recommended that similar studies be repeated.

Self-Report Measures: Self-report scales were used to determine burnout levels in the study. Since these scales rely on participants' self-assessments, they may contain subjective biases. However, self-reported burnout levels have been shown to be associated with cortisol regulation, suggesting that they are a meaningful indicator of psychological well-being.

Data Analysis Method: Latent growth curve models did not fit well with our data, so we were unable to examine changes in burnout levels over time using this method. Instead, we tested the hypotheses using longitudinal structural equation modeling and identified the temporal precedence between burnout dimensions. This should be noted as a deviation from our original data analysis plan.

Representativeness of the National Sample: There is limited information regarding the representativeness of the national sample derived from the Maslach Burnout Inventory. Future research should address this issue with up-to-date and representative samples.

Conclusion

This study provides new findings regarding the burnout levels of social studies teachers working with students with specific learning disabilities. Our research

shows that these teachers experience higher emotional exhaustion compared to the national sample, but report lower depersonalization and higher personal accomplishment. In other words, although teachers feel their workload is heavy, they find satisfaction in interacting with students and take pride in their work. Emotional exhaustion tends to decrease over the academic year; however, teachers who experienced high emotional exhaustion in the fall were observed to have higher depersonalization in the winter. Researchers are encouraged to continue studies in this area to better understand the burnout factors and processes of all social studies teachers.

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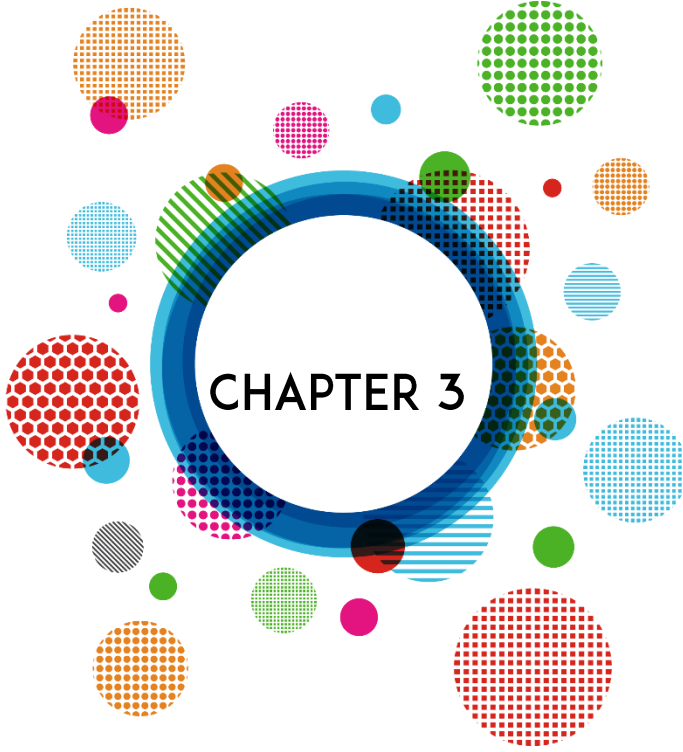
Artificial Intelligence-Supported Learning Management System

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1. INTRODUCTION

In recent years, the rapid development of digital technologies has profoundly impacted the fundamental structures and operational mechanisms of education systems. In particular, the shift towards online education, especially with the COVID-19 pandemic, has positioned distance learning as a permanent and strategic solution in higher education institutions. During this process, learning management systems (LMS) have become a fundamental component of digital learning experiences and have assumed an important technological role in the planning, implementation and evaluation of teaching activities.

Digital transformation is not limited to simply moving content online; it has also brought about fundamental changes in many areas, such as instructional design, student interaction, assessment methods, and learning analytics (Kurt, Ceylan, Bodur, & Yüksel, 2023). One of the most important factors driving this transformation in educational environments is artificial intelligence (AI) technologies. AI enables learning processes to become more personalised, data-driven, and adaptable, offering new areas of experience for teachers and students (Temur, 2024).

The digital transformation process of distance education has highlighted concepts such as 'flexibility,' 'accessibility,' and 'sustainability' in all areas of education (Aktürk, 2020). However, in this process, the development of technological infrastructure alone has not been sufficient; pedagogical approaches, the digital literacy of teaching staff, and the strategic orientations of policymakers have also needed to evolve (Doğan, Tunçer, & Arslan, 2024). In this context, the development of learning management systems and AI applications integrated into these systems are considered one of the most concrete indicators of digital transformation in education (Polat, 2024). In this transformation process, learning management systems, which are one of the most prominent areas of application of digital technologies, stand out with their potential to respond to both technical and pedagogical needs.

Learning Management Systems (LMS) play a central role in planning, implementing, and evaluating digital learning processes (Thangavel, 2024). These systems provide functional capabilities such as content delivery, student progress tracking, assessment and evaluation, and online interaction management to instructors. LMSs have become a critical tool for ensuring the sustainability of teaching activities, particularly in distance and blended (hybrid) education models (Al-Fraihat, Joy, Masa'deh, & Sinclair, 2020). Additionally, these systems enable the implementation of approaches such as personalised learning,

student tracking, and learning analytics. In this context, the functional and analytical infrastructure provided by learning management systems also creates a strong foundation for the integration of artificial intelligence technologies into educational environments.

In this section of the book, the process of integrating AI-supported applications into a distance learning system will be discussed within the framework of the open-source and widely used Moodle learning management system. In particular, the technical and pedagogical potential of the system will be evaluated through large language models such as ChatGPT, automatic assessment tools, learning analytics, and personalisation plugins. Thus, it will be demonstrated how AI technologies are reshaping the remote education experience through platforms like Moodle.

1.1. Integration of Artificial Intelligence into Educational Technologies

Artificial intelligence (AI) is emerging as a transformative force in educational technology, offering innovative solutions in many dimensions of teaching and learning processes (Temur, 2024). The integration of AI in educational environments takes various forms, such as intelligent teaching systems, personalised learning paths, natural language processing-based learning assistants, automatic feedback mechanisms, and learning analytics applications (Holmes, Bialik, & Fadel, 2019; Ayeni, Hamad, Chisom, Osawaru, & Adewusi, 2024). This integration makes students' learning experiences more interactive, flexible, and responsive to their needs, while enabling educators to analyse learning data and make more informed decisions (Kara, 2024). Additionally, AI-supported systems can analyse educational content to provide materials tailored to individuals' learning levels and optimise the learning process (Kolluru, Mungara, & Chintakunta, 2018). Today, the integration of these technologies into learning management systems, especially in online and distance learning environments, goes beyond the integration of a mere tool and also provides pedagogical depth.

AI technologies can be integrated into educational environments in many ways. This integration ranges from intelligent teaching systems to natural language processing-based chatbots, learning analytics tools and personalised content delivery. Especially in online and distance learning platforms, AI-based applications increase interaction and motivation by offering learning paths tailored to students' individual needs; they also provide data-driven support to teaching staff in monitoring student performance, developing early warning systems, and optimising learning processes (Zawacki-Richter, Marín, Bond, &

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Gouverneur, 2019). However, the integration of AI into educational technologies is not merely a technical transformation but also entails pedagogical and ethical restructuring. Therefore, it is critical that AI applications are designed not only to enhance system efficiency but also to create learner-centred, fair, and inclusive learning environments.

1.2. Artificial Intelligence Tools That Can Be Integrated into Learning Management Systems

This section discusses AI tools that can be integrated into LMSs. Each tool is briefly described, including a screenshot and a summary of the installation process on the Moodle LMS. AI tools that can be integrated into learning management systems are presented in Table 1.

Table 1: Artificial Intelligence Tools with LMS Integration

Tool	AI System	Type
ChatGPT (OpenAI API)	NLP / LLM	The most commonly used method is to develop an integrated chatbot in Moodle using special PHP-JS-based modules.
GeniAI	LLM	Moodle-integrated chatbot.
AI Chat	LLM	Moodle-integrated chatbot.
Ulibot	LLM	Moodle-integrated chatbot.
IBM Watsonx Assistant	NLP	Can be integrated as an external source using JSON API or LTI protocol.
Dialogflow (Google)	NLP	It is generally embedded in an iframe and run in an LMS.
Cloud Studio	LLM	Video > book translator.
Corolair AI	LLM	AI-based teaching assistant.
Nolej	NLP / LLM	AI-based content creation tool.
SmartEdu	NLP / LLM	Summarise course content and discussions with AI support.
AI Text to questions generator	NLP / LLM	AI-based question generation tool.
OpenAI Question Generator	NLP / LLM	AI-based question generation tool.
Copyleaks Plagiarism and AI Content Detector plugin	LLM	AI content detection tool.
AI Editor Tools	LLM	Moodle text editor AI tool.
Vinapse – Video AI	NLP	Tool for generating questions from videos.
Alphabees AI Tutor	LLM	AI-based learning assistant.
LionAI Reports	NLP / LLM	AI-based report generation tool.

The tools mentioned above can be uploaded to Moodle LMS as compressed (zip) files from the plugins section or manually via FTP. Nowadays, it is generally preferred to upload them from the Moodle admin panel under Site Administration > Plugins > Upload Plugin. The plugin upload section is shown in Figure 1.

Figure 1: Moodle Plugin Installation Section
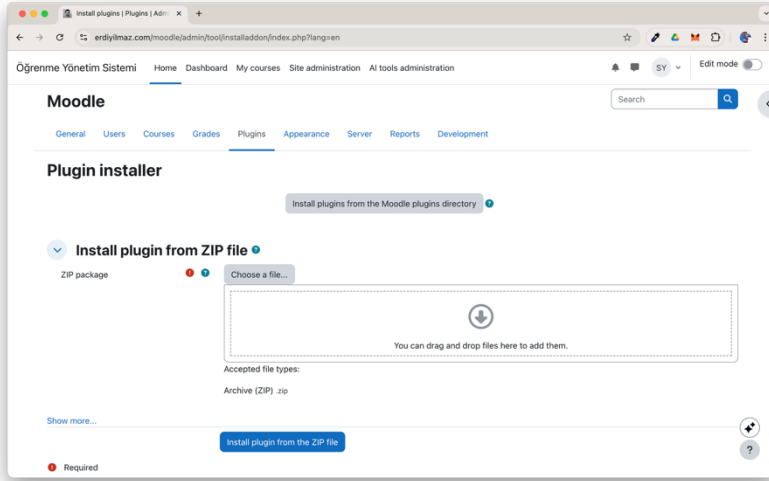
Through this panel, the AI plugins mentioned in Table 1 can be installed into the Moodle LMS.

1.2.1.   ChatGPT (OpenAI) Chat Bots

Chatbots used in educational environments have shown significant developments in facilitating interaction between students and learning platforms (Villegas-Ch, Govea, & Gutierrez, 2024). The OpenAI API module, one of the AI tools based on LLM (large language model), can be integrated into Moodle LMS and used. LLMs are a powerful type of AI that simulates how humans organise language and can interpret, predict, and generate text. This enables the contextual understanding of natural human language and allows the LLM to understand human input in conversational language and respond naturally (Bonner, Lege, & Frazier, 2023). In this context, the ChatGPT model developed by OpenAI has the potential to provide real-time, natural language processing (NLP)-based support to students and teaching staff when integrated into learning management systems (LMS).

These tools can be added to Moodle as blocks or modules, enabling students to obtain information on any subject. This also allows teaching activities to continue without students being disconnected from the learning environment.

Another such tool, GeniAI, can assist students where they get stuck, support them, and thus facilitate the establishment of an effective communication environment. Similarly, the ChatGPT-based 'OpenAI Chat Block' and 'Ulibot' plugins, along with the 'AI Chat' tool, are also available as Moodle plugins that can be used by both students and instructors (Block, 2025).

1.2.2.   IBM Watsonx Assistant and Dialogflow

IBM Watsonx Assistant is a chatbot that works similarly to other plugins, using natural language processing (NLP) and machine learning. It can be integrated into Moodle via API, HTML/JS. In advanced integrations, the student's Moodle data (e.g., username, course information, etc.) can be sent to Watson via JSON Web Token (JWT) or LTI to provide personalised responses (IBM, 2025).

Google Dialogflow is another artificial intelligence platform that uses natural language processing (NLP) technology. It is used to develop chatbot and virtual assistant applications. It can understand questions asked by students in natural language and provide structured responses (Google, 2025). To integrate into Moodle, an agent is created at https://dialogflow.cloud.google.com/. This agent can then be integrated into Moodle via an iFrame. Data received through Dialogflow is processed on Google Cloud servers. Therefore, data privacy and ethical principles must be taken into consideration.

1.2.3.   Cloud Studio

Cloud Studio is an innovative plugin designed to enhance the video experience in the Moodle environment. This plugin offers various features that transform the way videos are used in online learning, making them more interactive and effective (Eadtech, 2025). The most distinctive feature of Cloud Studio is its use of artificial intelligence to convert videos into books and mind maps. This technology not only makes content easier to understand but also supports a more visual and structured learning process. Additionally, it can help educators diversify and enrich their teaching materials by providing automatic suggestions for creating quizzes, short videos, and new videos. Cloud Studio can be downloaded from the Moodle Plug-ins page, directly uploaded into Moodle, and installed.

1.2.4.   Corolair AI

Corolair AI is an innovative plugin that provides a 24/7 AI-powered teaching assistant based on course content delivered on Moodle. This system makes learning more flexible and sustainable by allowing students to interact with learning materials outside of class. Powered by natural language processing

(NLP) technology, Corolair enables students to chat with the content and practise with exercises and tests provided by the system. This takes individualised learning support beyond traditional forms of out-of-class assistance (Corolair, 2025).

Corolair AI also supports students in asking questions directly to teaching staff, while enabling teaching staff to verify the accuracy of AI-generated responses in line with their expertise. In this way, the system both increases student engagement and enhances the quality of academic guidance. This plugin, which can be seamlessly integrated into the Moodle platform, transforms course areas into digital learning environments that support AI-powered, interactive, and personalised learning.

Corolair can be downloaded from the Moodle Plug-ins page and installed directly into Moodle by system administrators for quick setup.

1.2.5. Nolej

Nolej AI is an advanced educational tool that combines generative artificial intelligence technologies with cognitive psychology principles to add an innovative and pedagogically rich dimension to learning processes. This system, which can be used without leaving the Moodle user interface, enables teaching staff to produce interactive and customisable content that captures students' attention. With its user-friendly and secure structure, Nolej AI enriches the teaching process both visually and functionally by automatically converting teaching materials into H5P-based videos, tests, and gamified activities.

This transformation process not only diversifies content presentation but also supports differentiated teaching practices by considering individual differences among learners. This structure, which contributes to the development of personalised learning paths, especially in heterogeneous student groups, is considered an important step towards increasing learning motivation and cognitive engagement (Nolej, 2025). Thus, Nolej AI offers a comprehensive solution that increases inclusivity and flexibility in education by directly integrating the potential of generative artificial intelligence into learning environments.

For integration with Moodle, users must first register on the nolej.io platform and enable the API service. Then, the relevant Moodle plugin can be downloaded from the Moodle Plugins page and directly uploaded to the system, with the installation process completed in a short time.

1.2.6. SmartEdu

SmartEdu is an integrated block plugin that utilises artificial intelligence technologies to improve Moodle-based teaching processes. This plugin is designed to facilitate students' access to information and enable them to make more effective use of teaching materials. SmartEdu can analyse forum discussions and content such as PDF and PowerPoint files shared within lessons to generate automatic summaries. Users can obtain these summaries in simplified or detailed formats, thereby providing information tailored to different learner profiles (Júnior, 2025).

Another notable feature of the plugin is its ability to automatically generate quiz questions and study guides based on the analysed content. This allows instructors to quickly develop content-focused assessment materials, while students receive more structured support during review and reinforcement processes. SmartEdu can be obtained from the Moodle Plug-ins page and integrated directly into the system, and the installation process is user-friendly.

The content synthesis and assessment tools offered by SmartEdu increase teaching efficiency and contribute to the creation of AI-supported personalised learning environments by supporting students' individual learning paths.

1.2.7. AI Text to Questions Generator

AI Text to Questions Generator is an AI-powered Moodle plugin that can automatically generate exam questions based on text provided by teaching staff (Questions, 2025). The plugin can be downloaded from the Moodle Plug-ins page and easily installed by uploading it directly to the Moodle system. This tool makes a significant contribution to the teaching process, particularly in converting text-based content into assessment materials. The artificial intelligence algorithm analyses the given text and creates meaningful, content-appropriate questions tailored to the targeted cognitive level.

Similarly, the OpenAI Question Generator plugin offers AI-based question generation and enables the creation of different types of content, such as multiple-choice, true-false, and short-answer questions, based on teaching materials. Both plugins save time for teaching staff, increase content diversity, and contribute to more dynamic, flexible, and data-driven assessment processes. Such applications are particularly aligned with constructivist approaches that support content-based learning activities and contribute to the Technological Pedagogical Content Knowledge (TPACK) framework.

1.2.8.   Copyleaks Plagiarism and AI Content Detector

Copyleaks Plagiarism and AI Content Detector Moodle plugin is an advanced artificial intelligence tool used to detect content generated by artificial intelligence and identify traditional text-based plagiarism cases. This plugin not only detects plagiarism at the word level but also identifies complex scenarios such as meaning-based analysis, rewritten content detection, and source code plagiarism (Copyleaks, 2025). Especially in today's world where AI-supported content production is widespread, it provides strong support to educators in evaluating the originality of students' academic work such as exam answers, assignments, project reports, and software codes. The system can also successfully analyse situations such as the processing of text within images (OCR) and the restructuring of content taken from different sources, contributing to the preservation of academic integrity and the fairer and more reliable execution of evaluation processes. Additionally, thanks to its full integration with the Moodle interface, the system can be seamlessly integrated into existing evaluation processes, automating the content verification process.

1.2.9.   AI Editor Tools

The AI Editor Tools plugin is a functional tool that integrates with the Moodle text editor to provide artificial intelligence support directly within the writing process. With this plugin, users can save time when entering text and edit their content in a more effective and readable way. The system can automatically summarise, simplify and make text more fluent (Mayer, Lernplattform & Memmel, 2005).

In addition, AI Editor Tools offers an automatic translation feature to support multilingual learning environments and increases accessibility by reading text aloud (text-to-speech). Thanks to the plugin's advanced artificial intelligence infrastructure, visual content can be created from texts and text generation can be provided based on user input. This functionality facilitates the content creation processes of students and teaching staff, supporting creativity and productivity.

AI Editor Tools can be downloaded from the Moodle Plug-ins page and directly uploaded to the platform, with the installation process completed in a short time. Integrated into the written expression processes within the learning management system, this tool offers significant potential for enhancing the quality of both individual and collaborative learning activities.

1.2.10. Vinapse Video AI

Vinapse is an AI-based video processing plugin developed specifically to support adaptive learning processes. This cloud-based tool, which can be integrated into learning management systems such as Moodle, can analyse educational videos and perform a series of automated tasks. These tasks include transcribing video content, extracting key concepts and words, converting content into slides, and structuring content to facilitate learning (Vinapse, 2025).

Another notable feature of Vinapse is its ability to answer questions posed by students regarding the video. This feature, based on natural language processing (NLP) technology, deepens students' understanding of the video content while reducing the cognitive load on instructors, thereby providing a more efficient learning experience.

The plugin is not only available for educational institutions but also for in-house training departments and organizations running professional development programmes. In this regard, Vinapse offers a comprehensive solution for organizations seeking to enhance the quality of educational outcomes, optimize learning processes, and support individual performance through the use of artificial intelligence technology.

1.2.11. Alphabees AI Tutor

Alphabees is an advanced chat component plugin that can be integrated into the Moodle platform and provides artificial intelligence-based instructor support. This system offers a fully customisable user interface through the Alphabees portal and can be easily integrated into course pages using Moodle's block placement infrastructure. The plugin can generate fast and real-time responses thanks to its WebSocket-based communication infrastructure; it also enhances the user experience with advanced personalisation options (Alphabees, 2025).

Alphabees integrates with Moodle course content to provide students with context-aware, dynamic, and interactive support. Students can ask questions about the course, receive explanatory information about the content, and request personalised help during the learning process through this AI-powered chat interface. This supports individual learning paths and increases student participation and engagement. The plugin's flexible structure easily adapts to different teaching scenarios, offering a comprehensive solution that enhances the effectiveness and accessibility of online learning environments.

1.2.12. LionAI Reports

LionAI Reports is an advanced AI-powered reporting plugin that enables Moodle site administrators to analyse system data without requiring technical knowledge. This tool instantly converts queries written in natural language into SQL SELECT statements, thereby significantly simplifying data analysis and report generation processes (Shapira, 2025). Thanks to advanced artificial intelligence algorithms, the system understands the meaning of the user's question and generates the corresponding correct SQL query. These queries are executed as secure queries that do not directly interfere with the database (without risky operations such as UPDATE, INSERT, or DROP).

LionAI Reports provides ease of use by allowing users to preview, edit, and export (in formats such as CSV and XML) the generated reports through the Moodle interface. Enabling users with limited technical expertise to access reporting tools makes the plugin highly functional for corporate reporting processes. By combining Moodle's built-in database structure with an AI-powered query layer, this tool provides an effective and accessible solution for corporate decision-making, user activity monitoring, and improvement efforts based on learning analytics.

3. Results and Discussion

This section of the book examines the integration of artificial intelligence (AI)-supported applications into the Moodle learning management system and evaluates their contributions to distance learning processes. The findings of the study reveal that AI technologies are transforming education systems not only at the technical level but also at the pedagogical, managerial, and ethical levels. Especially with the acceleration of digital transformation in the post-COVID-19 period, AI solutions integrated into learning management systems play an important role in increasing the accessibility, sustainability, and effectiveness of distance education.

AI-based tools that can be integrated into the Moodle LMS include chatbots (ChatGPT, GeniAI, Watsonx, Dialogflow), content summarisers (SmartEdu), question generators (AI Question Generator), plagiarism detection systems (Copyleaks), text support tools (AI Editor Tools), and video analysis platforms (Vinapse), among others. These tools enable faster and more appropriate responses to students' individual learning needs, reduce the content production and assessment burden on teaching staff, and facilitate the implementation of data-driven instructional design.

The findings indicate that AI offers effective integration in three key areas:

Personalised Learning: Chatbots, recommendation systems, and content customisation tools adapt to students' individual learning paths, providing flexible learning experiences.

Data-Driven Decision Support: Reporting and learning analytics tools (e.g., LionAI Reports) enable administrators and educators to monitor and evaluate students' learning behaviours more effectively.

Automation and Efficiency: Automating processes such as question generation, summarisation, translation, and content creation streamlines teaching processes in terms of time management and increases the productivity of educational materials.

However, there are some important points to consider when integrating AI technologies into distance learning environments. These include data security, student privacy, the accuracy of AI outputs, algorithmic biases, and ethical principles. Without neglecting the human aspect of learning processes, it is important to integrate AI tools into instructional design in a way that supports rather than replaces instructor guidance.

In conclusion, AI applications integrated into open-source platforms such as Moodle have the potential to improve the quality of distance education in higher education. When used effectively and ethically, these technologies can produce innovative solutions in teaching processes and support student success. In this context, policymakers, instructional designers, and educational technology experts should systematically evaluate the opportunities offered by AI and structure these tools in a way that contributes to the sustainable digital transformation of higher education systems.

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CHAPTER 4
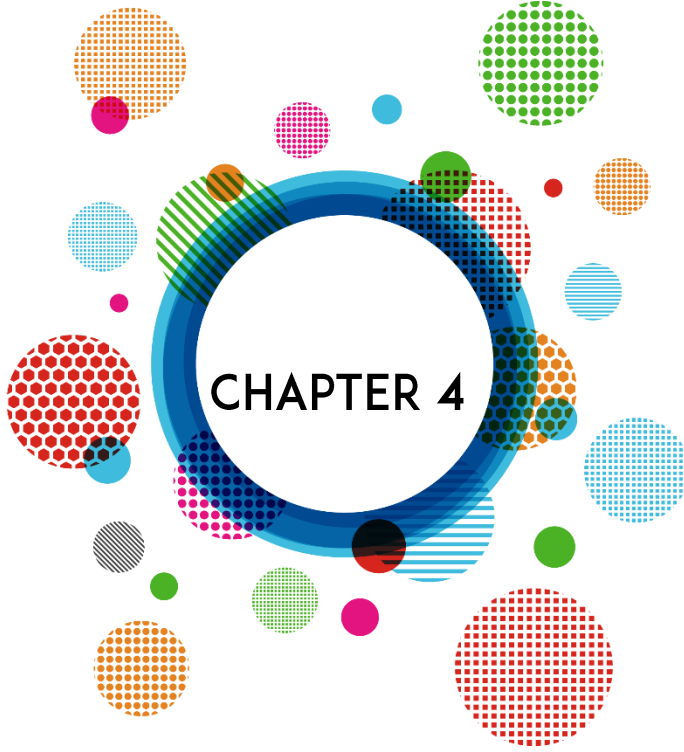
Examination of Science Teacher Candidates' Pictures and Opinions Expressing the Contrast of Erosion and Forest

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1. INTRODUCTION

Humans, who came into existence in nature with the birth of humanity, maintain a necessary relationship with nature as a part of the ecosystem. The basis of this relationship is efforts to meet their needs, like all other living things in nature. Therefore, in this relationship, there can be no direct destruction of nature by the human community trying to survive with the instinct of existence and survival. These early relationships express the lifestyle before the formation of civilization and therefore the competition with natüre (Karaağaç, 2022).

With the emergence of the consumer economy, environmental problems have emerged, and destruction has begun as a result of humanity's dominance over nature. Ecological problems such as unconscious consumption of world resources, global warming and climate change have erupted. As a result, the rainforests, which are the world's largest source of oxygen, are on the verge of extinction, the polar ice caps have begun to melt, and serious pollution has begun due to the damage caused to water and soil by unconsciously used chemicals (Karaağaç, 2022).

Fertile lands lost under natural conditions can be compensated within the framework of the natural cycle. Erosion can reach irreparable dimensions due to unconsciousness and human influence. Fertile soil lost due to the effects of erosion causes agricultural production capacity to decrease. Erosion occurs due to natural factors, but erosion causes irreparable damage when humans accelerate these factors (URL 1).

The most important reason for erosion is the increase in the effect of factors that can affect the erosion and transportation of soil. Soils with poor vegetation cover are quite easy to transport. The ability of wind, surface runoff, rainfall and irrigation water to carry soil together with the slope of gravity is closely related to the presence of vegetation. Despite the slope of the soil, vegetation can prevent the transportation of soil particles by forming a barrier in front of them. By reducing the effect of wind and raindrops, vegetation and forests slow down erosion and transportation (URL 1).

Forests, which are a source of oxygen for our world, also have a regulating effect on the climate. Without forests, the occurrence of landslides and floods increases. Without trees, material and moral losses will occur due to landslides and floods (URL 2).

By painting, individuals try to express their thoughts and feelings about a certain subject by synthesizing their observations with color, form and lines

(Malchiodi, 2005; Özdemir Özden and Özden, 2015). In this study, the perceptions of 4th grade prospective science teachers regarding the contrast between forest and erosion were examined through the drawings they made. In addition, semi-structured open-ended questions were used to explain their drawings and examine their thoughts on ways plants can reduce erosion.

2. MATERIAL AND METHODS

The research was conducted as a phenomenological design (Yıldırım and Şimşek, 2006) study. In this study, student drawings explaining the contrast between forest and erosion themes and their evaluations of their drawings were used as data collection tools. Additionally, prospective teachers' views on the use of plants to prevent erosion are included.

While the use of drawings is a powerful tool, it is not enough on its own. For this reason, explanations are needed for the drawings (Ersoy and Türkkan, 2009). For this reason, forms were distributed to students so that they could make their drawings in the classroom and answer open-ended semi-structured questions.

Data were collected from 27 students studying in the final year of the Department of Science Education at Trakya University in the environmental education course during the fall semester of the 2024-2025 academic year. Each teacher candidate was given a code between 1-27 and the explanations were made according to these codes. Among these codes, teacher candidates with codes 11, 21, 24 and 27 are male, and the others are female. They were given freedom in terms of paper size, drawing technique and paint type so that they could express themselves. Prospective teachers were asked to draw pictures explaining the sentence "Forest and erosion are like two enemy brothers." They were then asked to explain two open-ended questions based on the pictures they drew. "(1) Can you explain the drawing you made in writing? (2) What might be the reasons why plants reduce the effect of erosion?" The explanations given to the first question enable the researcher to handle the drawings more easily. The answers to the second question aim to determine the views of plants in terms of preventing erosion in nature. The data were then analyzed using the content analysis technique (Cohen and Manion, 1994).

3. RESULTS AND DISCUSSION

In this section, firstly, the drawings made by the prospective teachers showing the contrast between forest and erosion and their explanations of their drawings are given. Then, their views on the effects of plants on soil in terms of reducing erosion were discussed.

3.1. Analysis of Prospective Teachers' Drawings and Explanations Revealing the Contrast Between Forest and Erosion

In this section, some of the drawings and explanations selected from 27 candidates and reflecting the general situation are included. The drawings show that forest and erosion are metaphorically like two enemy brothers. In other words, where one is, the other cannot be found.

In her/his drawing, teacher candidate (TC1) expressed her drawing by taking two areas with forests and tree trunks that are clearly separated from each other (Figure 1). "*What I want to say in this picture is that erosion and forest are two enemy brothers. Erosion does not occur where there is a forest, and forests cannot easily survive where erosion occurs. There is a struggle for survival between the two. If we as humans do not destroy forests and protect them, we can overcome erosion.*"

Figure 1. The separated forest and tree stump area of TC1

TC4 explained his thoughts by perceiving the forest as female and erosion as male (Figure 2). "*In this painting, I expressed the forest with a female figure representing life and nature, and erosion with a male figure symbolizing drought and destruction. The crown of flowers symbolizes the beauty of the forest and the life it offers to nature. On the other hand, the cracked surface of erosion expresses how the degradation and drying of the soil turns into a destructive force.*

In this drawing, I wanted to emphasize the destructiveness of erosion and how important it is to protect forests in preventing erosion. To protect against life-threatening drought and the resulting erosion, forest areas must be protected, afforestation activities must be increased, and public awareness must be raised."

Figure 2. Enactment of forest and erosion with male and female figures (TC4)

TC5 explained the situation by drawing a picture of two children standing back to back and angry with each other (Figure 3). "*The fact that the child symbolizing the forest and the child symbolizing erosion stand back to back shows that they are completely opposite and incompatible with each other. If nature is protected, the forest sister will prevail, if it is neglected, the erosion sister will prevail and come into play. Standing back to back indicates that these two forces are enemies that will never meet. It also implies that the choice of nature is in human hands.*"

Figure 3. TC5's drawing of two siblings standing back to back, sulking at each other

TC6 drew and expressed the forest and erosion by separating them with clear boundaries (Figure 4). "*The forest on the left is a piece of nature that produces plenty of oxygen and creates a living space for living things. Green is at the forefront as the color of peace and abundance. I wanted to express the power of*

the soil to sustain the necessary life cycle in the painting.

In the erosion on the right, cracked soil, fragmented tree roots and a *lifeless nature are in the foreground. It is a result of soil loss and degraded ecosystem due to human impact or natural factors. It reveals how erosion is a destructive force and how it threatens nature.*

The forest protects the soil while erosion destroys it. This contrast shows that the two sides are in constant struggle. The border between forest and erosion is clear. I tried to represent the thin line between this border and the preservation or loss of nature. This division represents the conflict between the two brothers. Although they are opposites, they are connected. If there is no forest, erosion occurs; if there is erosion, the forest is under threat."

TC9 compared forest and erosion to an hourglass (Figure 5). *"The hourglass represents the passage of time and the cyclicity of all things in nature. Forests and erosion are inseparable parts of this cycle. One creates and gives life, the other consumes and destroys. The flow of sand between the two chambers also highlights this cycle as unstoppable. The forest is slowly being eroded by erosion, but both forces need each other to survive. This symbolizes both hostility and dependency. The forest in the upper chamber of the hourglass represents the growth and renewal side of life. The roots and branches of trees symbolize the power and complexity of life. The forest is the creative and nurturing side of nature, but over time this beauty begins to disappear due to the effect of erosion in the lower reservoir. The lower chamber represents the transient nature of life and the inevitable destructiveness of erosion. Cracked soil, swirling dust and drought demonstrate the all-destroying power of erosion. However, this power is not completely destructive; it is also part of the transformation. While erosion destroys, it also prepares the ground for rebirth. The flow of sand between the two chambers demonstrates the interconnectedness of these two forces. This relationship directly supports the analogy of "two enemy brothers." Although they are at opposite poles, they are part of the same nature. This hostility is part of a balance that ensures the continuity of nature."*
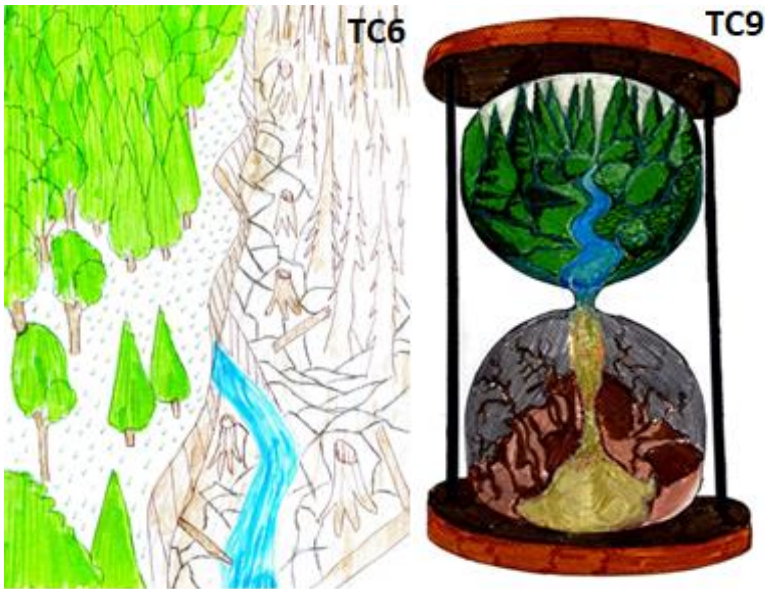
Figure 4. Forest and erosion contrast landscape of TC6

Figure 5. TC9's hourglass simulation of forest and erosion

TC10 considered the forest and erosion as two figures facing each other (Figure 6). "*In this painting, both the constructive and destructive aspects of nature are presented together. The picture shows two side profiles with their foreheads pressed against each other. These profiles represent two opposing forces of nature: the woman represents the forest and the man represents erosion. The female figure has a calm stance and her face is surrounded by branches and leaves. This symbolizes the peaceful and protective nature of the forest. The male figure is in the form of a woody creature and has a screaming facial expression. This expresses the destructive and aggressive aspect of erosion. The following messages are emphasized in the picture:*

1) A Meeting of Opposites: Forest and erosion are two forces of nature with completely opposite characteristics. The fact that male and female figures confront each other indicates that these forces are in constant conflict and affect each other.

2) The Tranquil Power of the Forest: The forest is depicted as a figure that protects the land, supports life, and brings peace to the environment.

3) The Destructive Violence of Erosion: Erosion is a figure that wears out the soil, disrupts ecosystems and harms nature as a woody creature. The screaming facial expression expresses the destructiveness of this process.

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4) The Imbalance of Nature: The painting refers to the delicate balance of nature, this struggle for balance between the forest and erosion.

The painting carries a message of nature conservation and environmental awareness, both visually and conceptually. It reminds people to understand both the dramatic and destructive sides of nature and to fulfill their environmental responsibility to resolve the conflict of these two sides."

Figure 6. Forest and erosion are like two figures facing each other harshly (TC10)

TC11 forest and the effects of erosion on the ecosystem (Figure 7). *"In the picture, I stated that forests play an important role in combating erosion, but the destruction of forests leads to accelerated erosion. In forests, tree roots prevent erosion by holding the soil. However, when forests are destroyed, wind and water accelerate erosion, causing the soil to become infertile. On the other hand, increasing erosion makes it difficult for forests to grow and threatens the forest ecosystem. Therefore, forests and erosion are two factors that negatively affect each other. Afforestation is essential for a beautiful living space."*

Figure 7. Comparison of forested and eroded ecosystems in nature (TC11)

TC14 discussed the role of forests in protecting nature (Figure 8). "*The painting I made represents the sentence "forest and erosion are like two enemy brothers". The painting I made brings two different situations together, allowing us to see the difference between the healthy and degraded states of nature. On the left side, I wanted to explain how beautiful and balanced nature can be. Green trees tell that nature is healthy. The presence of flowers shows that the soil is fertile and the ecosystem is alive. Animals show how rich the forest ecosystem is. The sun and a blue sky indicate that nature is peaceful and balanced. So, in this part, it tells people why nature needs to be protected and that forests are the basis of a healthy environment. On the right side of the picture I made, I wanted to explain the effects of erosion. Dried trees tell us that the ecosystem will collapse with the destruction of forests. The loss of trees causes the soil to be easily carried away by wind and rain. This also affects erosion. Dry soil is one of the most obvious results of erosion. Without the roots of trees, the soil loses its fertility. It shows the decrease in the number of animals, the disruption of the natural balance and the loss of animal habitats. Dark clouds indicate an atmosphere that is suffering from environmental degradation.*

In summary, forests act as a barrier to prevent erosion by protecting the soil. However, deforestation causes erosion to accelerate, which affects not only nature but also human life. The painting I made raises awareness among people about protecting the environment. It shows the dangers that can be encountered if steps are not taken to protect forests and prevent erosion. My aim was to direct people to take responsibility towards nature and to explain how important the protection of forests is in preventing natural disasters such as erosion."

Figure 8. The role of forests in nature conservation (TC14)

TC15 expressed the effect of the forest with landslides caused by rain and wind erosion in her/his drawing (Figure 9). "*Erosion is the removal of soil from its natural environment by effects such as water, wind and gravity. Although erosion is a natural event, it is exacerbated by effects such as water, wind and gravity as a result of the deterioration of the natural structure of the land. I drew effects such as rain and wind to explain how erosion occurs. After a while, the materials on the soil begin to drift downwards under the influence of wind and rain. The topsoil is eroding and the materials that are blown downwards have a negative impact on trees and other living things, in other words, forests in general. I drew more trees in a certain section because the abundance of trees would prevent erosion. Here I explained that trees try to prevent erosion.*"

Figure 9. Landslide drawing of TC15 in the absence of trees

In TC16, he used the two enemy brothers, Abel and Cain, in his painting (Figure 10). "*While drawing this picture, I was inspired by the story of Cain and*

Abel. I likened the relationship between erosion and forests to two siblings born from the same ancestor who chose different paths. On the right side of the image, I depicted erosion like Cain. The figure, with a strong body and an aggressive stance, symbolizes destruction with the stick in his hand. Cracked soil and fallen trees show the damage erosion has done to nature. Just as Cain attacked Abel, erosion attacks the forest and threatens its existence. On the left side, I depicted the forest with a peaceful and lively figure like Abel. The crown of trees on his head represents his role in protecting and preserving nature. I reflected the richness and life force of nature by adding flowers, insects and a flowing stream around it. I wanted to show that the forest is resilient to the destruction of erosion. When I drew the picture, I wanted to show how erosion makes the soil barren and how forests resist this damage. Like Cain's choice of evil, erosion destroys nature, but like Abel's goodness, the forest continues to sustain life."

Figure 10. TC16's comparison of forest and erosion to Cain and Abel

TC18 addressed two contrasting ecosystems (Figure 11). "*In this picture it explains how forests help to stabilize the soil and how the roots prevent landslides due to natural factors such as rain. It emphasizes that deforestation increases erosion, while forests reduce and prevent the driving effect of water on the soil. In the picture, it is explained that the vegetation on the left side, which is a forest, protects the soil surface against erosion effects such as wind and water, and the tree roots prevent erosion by holding the soil. On the left side of the painting is a healthy, lush forest, with tall trees and rich soil (I showed the richness of the soil by coloring it in dark brown). On the right, due to the effects of erosion, there are dry and leafless trees, roots sticking out to the surface, stones and landslides. The soil is infertile. It has been exposed to factors such as water and wind, causing soil loss. In the picture on the left, plants help rainwater to sink more slowly with*

their leaves and stems. Vegetation prevents wind from blowing away soil, reducing erosion, especially in dry and savanna areas. Additionally, green, living plants like the one on the left add organic matter, increasing soil fertility and facilitating the absorption of water into the soil. So this picture shows how the absence of forests leads to erosion and how the two elements negatively affect each other. Protecting forests prevents soil loss.."

Figure 11. Two seemingly contrasting ecosystems (TC18)

TC21 divided the world into two and addressed forest and erosion (Figure 12). "*Forests and erosion are like two opposing forces of nature. Forests hold the soil and prevent erosion, while erosion wears away the soil. There is a very delicate balance in nature, it appears to be divided into two in the picture. On one side, the trees have bloomed leaves and the world is alive and livable, while on the other side, the dry land is fragmented. In the picture, when we remove the vegetation that protects the soil, what remains is a fragmented world.*"
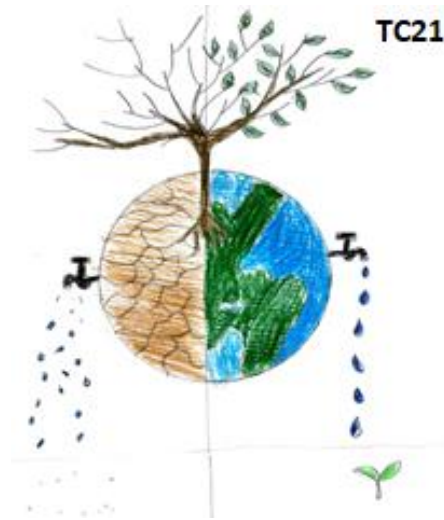
Figure 12. Two contrasting views of the world: forest and erosion (TC21)

TC27 highlighted the imbalance between erosion and forest (Figure 13). "*As forests, green areas and wetlands decrease, the soil becomes dry and turns into barren arid lands accompanied by erosion. This will affect living things. As long as the mitigation factor, living organisms and productive areas continue to be in balance, erosion will decrease as long as we do not harm these areas. Minerals, living things and water in the soil will increase productivity and drought will decrease.*"

Figure 13. Forest and erosion dominated ecosystems (TC27)

3.2. Opinions of Prospective Teachers on the Effects of Plants on Soil Erosion Reduction

In this section, the answers of the teacher candidates regarding the activities carried out by plants to prevent erosion were evaluated (Table 1).

Table 1. Opinions of prospective teachers about reducing the effects of erosion in areas where plants are located

Effects of plants against erosion	f
Roots hold soil particles together by binding them together.	22
It prevents soil movement (sliding) caused by wind and water.	19
It prevents raindrops from falling directly on the soil surface.	22
It allows the soil to gradually absorb rainwater.	20
Plants prevent erosion by reducing surface runoff.	11
It balances the moisture level of the soil.	2
The debris covering the soil provides organic matter.	14
Trees form natural barriers against the wind.	16
They take part in maintaining the ecosystem balance.	3
They perform natural filtration by reducing sediment transport.	4
In areas devoid of plants, migration increases and economic and social problems occur.	2
They prevent flood and avalanche disasters from occurring.	1
It protects the structure of the soil and increases its durability.	8

Table 1 shows the statements of prospective teachers about the reasons why plants reduce erosion in 13 groups. 22 individuals stated that plant roots hold soil particles together and act as an umbrella for raindrops, gradually falling to the soil. The statements made by some prospective teachers on this subject are given below.

TC4 expressed the effects of plants on the soil as follows. "*Plant roots hold the soil together and prevent landslides. The leaves and branches of plants prevent rain from hitting the ground directly and slow down the flow of water on the surface. Plants reduce wind speed and prevent soil from being carried away. Plants absorb excess water from the soil, preventing it from being eroded by water. For these reasons, plants play an important role in reducing the impact of erosion.*"

TC7's statement on plants protecting the soil is as follows. "*Vegetation is the main source of preventing erosion by stabilizing the soil. Since grass and shrub-like plants spread low to the ground and completely cover the soil, they hold the soil together with their trunks and roots, and their leaves act as umbrellas under*

the rain, preventing the rain from breaking up the soil and causing damage through erosion. Planting plants in the direction that the wind blows also reduces the effects of erosion. By planting it on the windy side, the wind speed is reduced and direct contact with the surface is prevented. Intensive agricultural lands can be framed on four sides with windbreak trees. Planting plants together with geotextiles also provides more effective results against erosion. It provides protection against the erosive effects of water and wind by leaving the remaining stubble of the plants on the soil and ensuring an even distribution of above-ground waste throughout the year."

The statements of the candidate with code TC8 are as follows. "*The role of plants on the effect of erosion is very important in terms of protecting the soil and preventing erosion. Plants can slow down or completely prevent erosion through natural processes. The roots of plants wrap around the soil like a web and hold the soil particles in place. In this way, it becomes difficult for wind and water to carry the soil. Plants with deep roots fix the soil more strongly and prevent the surface from slipping. Vegetation covers prevent rainwater from directly hitting the soil and have an erosion reducing effect. Plants prevent rainwater from accumulating on the surface and running off quickly, allowing water to infiltrate into the soil. Plants slow down the wind and prevent the soil from being blown away. Shrubs and grasses protect the surface soil, while tall plants reduce the overall wind speed. Plants minimize the effects of erosion from both wind and water. Protecting and increasing vegetation cover is important for the sustainability of the soil. For this reason, protecting forests, carrying out afforestation activities and correct agricultural practices will reduce the effects of erosion.*"

TC9's statement is as follows. "*Plant roots penetrate the different layers of the soil and physically hold it together. Especially deep-rooted plants make it difficult for the soil to be carried away by water and wind. Roots mechanically compact the soil, increasing its resistance to erosion. Plants cover the soil with their leaves and branches, preventing rain from hitting the ground directly. This prevents the topsoil from loosening and being carried away. It also reduces the speed and impact of the wind, significantly reducing the amount of soil that the wind can carry. Plants accumulate organic matter through fallen leaves and branches, which increases the water-holding capacity of the soil and strengthens its resistance to erosion. Organic substances improve the structure of the soil by increasing the activities of microorganisms living in the soil. Plants slow down rainwater runoff, preventing soil from being carried away from the surface. Leaves and branches absorb water or conduct it to the soil by dripping. At the*

same time, plant diversity increases the resistance and flexibility of the soil, providing more effective protection against erosion."

TC12 explained the importance of plants in preventing soil transport as follows. "*The roots of the plants wrap the soil like a net, preventing water and wind from carrying the soil away. At the same time, vegetation prevents raindrops from hitting the ground directly and slows down the speed of water flow on the surface, preventing soil erosion. Plants reduce surface runoff by increasing the water absorption capacity of the soil and strengthen the structure of the soil by providing organic matter. This organic matter increases the water retention capacity of the soil and makes it more resilient. In addition, plants prevent wind erosion by slowing down the wind and prevent cracking by preserving soil moisture. With these features, vegetative areas prevent soil loss and contribute to the protection of the natural ecosystem.*"

TC15's statement is as follows. "*The effects of erosion create negative effects on the environment. Erosion causes the vegetation to disappear and increases the probability of landslides, floods and avalanches. Unproductive and destroyed agricultural lands become unable to feed the people living on them and cause major economic and social problems by increasing migration from rural areas to cities. That's why we need to increase the variety and number of plants in our vegetative areas. We must increase our forests because the risk of erosion increases in areas where there are no plants or forests or where there are few. To reduce this risk, our plants need to reduce erosion.*"

4. CONCLUSION

In this study, prospective teachers discussed and explained the contrast between the forest and erosion themes, which they frequently encounter in their daily lives and in the media, in their drawings. When the drawings are examined in this regard, they display content on very different subjects. They demonstrated with their drawings how important forests are for our world and their importance in protecting the soil against erosion.

The plants' statements about reducing erosion were also evaluated and collected in 13 groups. The most emphasized statements are that plant roots hold soil particles together and act as an umbrella for raindrops to fall slowly to the soil.

The Anthropocene Age can be considered as the beginning of a period in which the integrity of man-nature and man-man is again disrupted in line with man's interests, in which man causes irreversible damage to nature and may lead

to his own end (Karaağaç, 2022). The perspective that lacks ecological balance, accepts humans as the masters of nature and leaves nature in the hands of humans is the main factor in the disruption of ecological balance (Gül, 2013).

There is a need to increase green areas to prevent the loss of soil, a natural resource, through erosion. Traditional afforestation methods can be time and labor intensive. However, aerial seeding can speed up this process, where seeds are spread through the air using drones or airplanes. This provides the opportunity to create a forest by spreading seeds quickly and effectively over large areas. This method provides a great advantage, especially in hard-to-reach areas or in urgent forest regeneration projects. Within the framework of sustainable development goals, more importance should be given to afforestation efforts and especially aerial seeding.

Afforestation of degraded forest areas and open areas within forests, preservation of forests in upper forest zones and on steep lands, and not cutting down these forests will protect the soil. Increasing the growth performance of old, sparse and depleted stands by naturally rejuvenating these stands will also be beneficial (Görcelioğlu, 1997).

Compliance with the grazing capacity in pastures, timely grazing, planting of plant species that are effective in erosion control in pastures, and conversion to barn animal husbandry as an alternative to pasture animal husbandry will contribute positively to the solution of the problem (Balabanlı vd., 2005).

Roosevelt's quote explains the importance of trees very well. "The level of civilization of a nation is measured by the afforestation of the lands it lives on."

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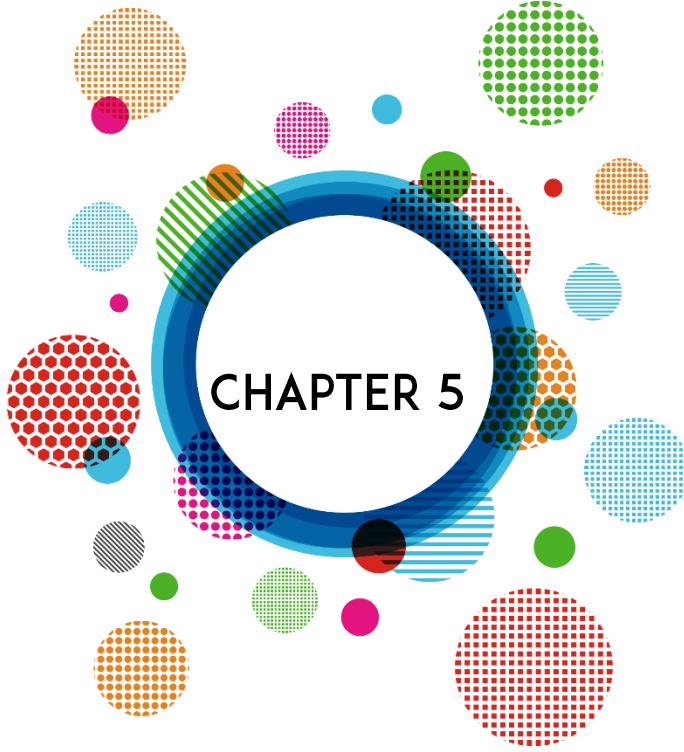
CHAPTER 5

The Relationship Between School Climate, Sense of Belonging to School, and Student Absenteeism in High Schools: An Analysis on PISA 2022 Data

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1. INTRODUCTION

One of the most important factors that determine the quality of educational organizations is the school climate. School climate is a broad concept that includes the physical and psychosocial environment of the school, as well as the interactions between students, teachers and administrators (Akbaba and Erdoğan, 2024). School climate is also defined as the totality of social norms, values, relationships and organizational structures that shape individuals' perceptions of the organization (Wang and Degol, 2016). In this context, a positive school climate not only increases academic success but also positively affects the psychology of students and teachers (Cohen et al., 2009).

Previous studies have shown that school climate is associated with many variables such as *teachers' job satisfaction* (Aktan and Toraman 2022; Sriadmitum, 2023), *student achievement* (Bektaş and Nalçacı 2013; Chiu et al., 2016), *student absenteeism* (Kearney et al., 2020; Erdem and Sarı, 2021), and school engagement (Mart, 2013; Kızıldağ et al., 2017). A healthy and open school climate increases teachers' professional motivation and strengthens students' personal development and social adaptation (Şenel and Buluç, 2016). In contrast, an unhealthy and closed school climate increases conflicts within the school, leads to teacher burnout, and increases students' absenteeism rates (Saputra et al., 2020).

Another important factor that affects students' academic success and psychosocial development in the educational process is the sense of belonging to school. Belonging to school is defined as students feeling part of the school and being emotionally attached to the school community (Osterman, 2023). This sense of belonging plays a critical role in increasing students' academic motivation while reducing school dropout rates and strengthening their social adaptation (Gopalan and Brady, 2020). Students' sense of belonging to school is shaped by various variables such as school climate, teacher-student relationships, peer support, and school culture (Marksteiner and Kruger, 2016). Research shows that students have a higher sense of belonging in schools with a positive school climate, and this is directly related to their academic success. (Faircloth and Hamm, 2005; Sarı and Özgök, 2014). Additionally, it is stated that in educational environments with strong social support mechanisms, students' sense of belonging is strengthened and their emotional well-being increases (Ayğar and Kaya, 2017; Cinar and Nayır, 2022; Hassard et al., 2024).

Another factor affecting the success of educational organizations is student absenteeism. Absenteeism leads to many negative consequences such as the

decrease in the time students spend at school, the deficiencies they experience in the learning process, difficulties in social skill development, and the weakening of school-family-teacher relationships (Önder, 2017). Absenteeism not only affects the individual development of the student, but also threatens the overall educational quality and social structure of the school (Yılmaz et al., 2020). Studies on student absenteeism show that the student's sense of belonging to the school and his/her perception of the school climate are related to absenteeism (Barlow and Fleischer, 2011; Gökyer, 2012; Özgözgü et al., 2024; Stokes et al., 2024). However, it is considered that more research is needed on the relationship between school climate, sense of belonging to school and students' absenteeism. In particular, analyses conducted on data obtained from a large sample group such as the PISA 2022 study will contribute to understanding the nature of the relationship between these variables. In this study, the relationships between school climate, sense of belonging to school and absenteeism are examined from the perspective of students, based on PISA 2022 data.

2. THEORETICAL FRAMEWORK

2.1. School Climate

School climate refers to the physical, social and academic environment of an educational organization and covers the effects of this environment on students, teachers and other employees (Aybek et al., 2022). School climate is a concept that is addressed with different dimensions. These dimensions include the educational and administrative interaction of the school (Gökçe and Kahraman, 2010). The physical environment, social environment, emotional environment, pedagogical environment and safety-discipline dimensions of school climate are explained in the following subheadings.

Physical Environment: The physical structure of the school affects how students and teachers experience the educational process. The order of the classrooms, cleanliness, school security and physical infrastructure are important elements that determine the school climate. A good physical environment allows students to feel safe in school and have a successful learning experience (Orpinas and Horne, 2009).

Social Environment: Social relationships in school are an important component of school climate. Friendships between students, teacher-student and administrator-student relationships, bullying, and social exclusion have a great impact on school climate. A positive social environment helps students develop a sense of belonging at school and can reduce negative behaviors such as absenteeism and indiscipline (Encina and Berger, 2021).

Emotional Environment: School climate is also related to how well students' emotional needs are met. Students feeling valued, accepted, and supported at school is an important component of school climate. Emotional support is shaped by the guidance and empathy teachers provide to their students. Students' emotional well-being can increase their academic success and interest in learning (Loukas, 2007).

Pedagogical Environment: Teaching methods, curriculum design, and how lessons are taught are also part of the school climate. As students actively participate in the teaching process, the likelihood of a positive school climate increases. The teaching relationships that teachers establish with their students contribute to the school climate (Rudasill et al., 2018).

Safety and Discipline: Safety and discipline in school are one of the basic elements of school climate. The physical and psychological safety of students is necessary to create a healthy school climate. In a safe and supportive environment, students are more willing to come to school (Charlton et al., 2021).

2.2. Sense of Belonging to School

The sense of belonging to school is the situation where the student does not see his/her school as just an educational organization, but feels connected to it and as an important element of the school (Ahn and Davis, 2023). This feeling develops when the student perceives that he/she is accepted, supported and valued in the school environment (Gillen-O'Neel, 2021). Students with a high sense of belonging are more compliant with school rules and values, actively participate in academic and social activities, and feel responsible as a member of the school community (Barringer and Gu, 2023). The sense of belonging to school can be addressed within different conceptual frameworks. The frameworks presented below can help understand the nature of the connection that students establish with the school and the impact of this connection on their learning experiences (Gökdal and Düşünceli, 2019):

Attachment Theory: According to attachment theory, students' sense of belonging to school is based on their ability to establish a secure bond with the school. When students feel safe and valued at school, they develop a strong bond with the school. This bond can improve students' academic success, time spent at school, and social adaptation. Students' attachment to school is shaped by the emotional bonds they establish with their teachers and friends (Tüzün and Sayar, 2006; Howe, 2012).

Social Identity Theory: Social identity theory argues that students' sense of

belonging to school is linked to their group identities at school. School creates a social identity area where students define themselves. When students are accepted as a part of the school and share the school culture, school belonging becomes strong. This becomes more evident especially in group work, school activities and social interactions (Demirtaş, 2003; Hogg, 2016).

Holistic Development Theory: Holistic development theory argues that students' physical, psychological and social developments are a process that affect each other. In this theory, how students feel about themselves at school has a direct impact on their personal development. Belonging to school forms the cornerstone of students' psychological and social development. A strong sense of belonging at school increases students' participation in school, which contributes positively to students' individual development (Haynes, 2009).

School Climate Approach: According to the school climate approach, the sense of belonging to the school is closely related to the general climate of the school. A positive school climate makes students feel valued at school. In order to strengthen students' sense of belonging to the school, it is important to create a safe, supportive, respectful and motivating environment at school. A positive school climate can increase students' commitment to the school and prevent absenteeism (Bradshaw et al., 2021).

2.3. Student Absenteeism

Student absenteeism is the situation where a student does not attend school regularly for various reasons within a certain period of time (Wadesango and Machingambi, 2011). This situation can be short-term and occasional (temporary absenteeism) or long-term and chronic (Aküzüm, 2015). Absenteeism can be caused by individual, familial, school environment-related or socio-economic factors and can negatively affect the student's academic success, psychosocial development and connection with the school (Simons et al., 2010). Various studies have examined the reasons for student absenteeism from different perspectives and revealed that these reasons mostly arise from in-school, out-of-school and individual factors (Balkis et al., 2016; Allensworth et al., 2021; Akkus and Çinkir, 2022).

2.3.1. In-School Factors:

Quality of Education and Teaching Methods: Students' participation in classes depends on the degree to which teaching methods attract students' attention and are effective. If teaching methods are monotonous or ineffective, students may be reluctant to attend classes (Dağlı and Can, 2023).

Teacher-Student Relationship: The relationships between students and teachers have a significant impact on absenteeism. Negative teacher-student relationships can lead students to develop a negative attitude toward school (Knoster, 2016).

School Climate and Social Environment: The social climate of the school and the sense of belonging that students feel at school can affect absenteeism rates. The lack of a safe and supportive environment at school can hinder students' participation in school (Kipp and Clark, 2022).

Physical and Psychological Health: Physical conditions in the school environment (classroom environment, cleanliness, physical comfort) and psychological health of students are also related to absenteeism. Psychological conditions such as stress, anxiety, and depression at school can increase the rate of absenteeism in students (Gottfried and Kirksey, 2017).

2.3.2. Out-of-School Factors:

Family Status and Socioeconomic Factors: The socioeconomic status of the family can affect student absenteeism. Especially in low-income families, students may have lower rates of school attendance. In addition, negative situations within the family (divorce, domestic violence, etc.) can also cause absenteeism (Özcan, 2022).

Health Problems: Students' health problems are a significant cause of school absenteeism. Chronic illnesses, mental health problems, or physical disabilities can make it difficult for students to attend school (Sahin et al., 2016).

Social Environment and Peer Relationships: Peer relationships in and around the school are also linked to absenteeism. Social exclusion, bullying, or lack of a peer group can cause students to not want to go to school (Kılınç, 2024).

2.3.3. Individual Factors:

Student's Personal Interest and Motivation: The student's personal interests and motivation for school subjects are an important factor affecting the level of absenteeism. A subject or school in which the student is not interested may prevent the student from attending school (Robinson et al., 2018).

Student's Academic Success Level: A low level of success may cause students to avoid going to school due to fear of failure. In addition, academic difficulties may prevent students from attending school (Özbaş, 2010).

Absenteeism not only affects the academic success of the student, but also increases the risk of the student's disengagement from school and can lead to

school dropout in the long term (Garcia, 2018). Determining the factors underlying this problem, such as school climate and sense of belonging, can contribute to the development of effective intervention programs aimed at reducing absenteeism rates. In this context, it is important to examine the relationship between school climate, sense of belonging to school, and student absenteeism in detail. In particular, this relationship needs to be understood in order for administrators and policy makers in educational organizations to develop effective strategies to reduce student absenteeism.

Purpose of the Research

The primary aim of this study is to examine the relationship between school climate, sense of school belonging, and student absenteeism, and to understand the implications of these factors within the education system. In this context, the study seeks to answer the following research questions:

1. What are the perceptions of the high school students participating in the study regarding the school climate?

2. What is the level of the sense of belonging of the high school students participating in the study?

3. What is the level of absenteeism of the high school students participating in the study?

4. Is there a significant relationship between the perceptions of the school climate, the sense of belonging to the school, and absenteeism of the high school students participating in the study?

5. Are the perceptions of the school climate and the level of belonging to the school of the high school students participating in the study significant predictors of the levels of absenteeism?

3. METHOD

3.1. Model of the Research

In this study, which examines the relationship between school climate, sense of school belonging, and student absenteeism from the perspective of high school students, a correlational survey model was adopted. Additionally, since the study also aims to determine the levels of school climate, school belonging, and student absenteeism, a descriptive survey model was also used.

3.2. Universe and Sample

The universe of the study consists of students studying in high schools in

Turkey; the sample consists of high school students who participated in the PISA 2022 study from Türkiye. 196 schools and 7250 students (3561 female students (%49.1) and 3689 male students (%50.9) participated in the PISA 2022 study from Turkey. The data set used in the analyzes to be made within the scope of the study was downloaded from the web platform of the Organization for Economic Cooperation and Development (OECD), which conducted the PISA 2022 study (OECD, 2023). After removing the missing data, analyzes were conducted on the data set containing data obtained from a total of 6947 students.

3.3. Measurement Tools

The data collection tool for this study is the relevant sections of the student survey used in the PISA 2022 research. 3 scales included in the survey applied within the scope of the PISA 2022 research were used in the research. Information about these scales is given below.

School Climate Scale: The "School Climate" scale in the PISA 2022 student survey was used to measure students' perceptions of the climate of the school they study in. This scale consists of 8 items (ST267Q01JA, ST267Q02JA, ST267Q03JA, ST267Q04JA, ST267Q05JA, ST267Q06JA, ST267Q07JA, ST267Q08JA). The items in the scale have a 4-point Likert-type rating ranging from "Strongly disagree (1)" to "Strongly agree (4)". The items coded ST267Q04JA (*Teachers at my school intimidate me*) and ST267Q08JA (*Teachers at my school are rude to me*) are reverse-coded because they contain negative statements about school climate. Two sample items from the scale are: "When I enter the classroom upset, my teachers worry about me", "Teachers in my school care about the well-being of students" (OECD, 2023). The quality of student-teacher relationships in schools is measured from the student's perspective with items of similar content. The Cronbach Alpha internal consistency coefficient of the scale was calculated as 0.695. Since this value is very close to the generally accepted value of 0.70, the internal consistency of the scale was considered sufficient.

Sense of Belonging to School Scale: In this study, the "Sense of Belonging to School" scale in the PISA 2022 student survey was used to measure students' sense of belonging to school. This scale consists of 6 items (ST034Q01TA, ST034Q02TA, ST034Q03TA, ST034Q04TA, ST034Q05TA, ST034Q06TA). The items in the scale have a 4-point Likert-type rating ranging from "Strongly disagree (1)" to "Strongly agree (4)". Items coded ST034Q01TA (*I feel like an outsider or an outsider at school.*), ST034Q04TA (*I feel like an outlier and don't belong at school.*) and ST034Q06TA (*I feel lonely at school.*) are reverse-coded

because they contain negative statements about belonging to school. Two sample items in the scale are: "I make friends with other students at school easily.", "I feel like a part of the school." (OECD, 2023). Students' sense of belonging to school is measured with items with similar content. The Cronbach Alpha internal consistency coefficient of the scale was calculated as 0.751. Since this value is greater than the generally accepted value of 0.70, the internal consistency of the scale was considered sufficient.

Absenteeism Scale: The data from the "Absenteeism" scale in the student survey in the PISA 2022 study was used to measure student absenteeism. This scale consists of 3 items (ST062Q01TA, ST062Q02TA, ST062Q03TA). The items in the scale have a 4-point Likert-type rating ranging from "Never (1)" to "Five or more (4)". The items containing propositions regarding the student's absenteeism status are in the same direction and there are no reverse-coded items. A higher score from the scale indicates that the relevant student has had more absences in the last 2 weeks. The items in the scale are: "I skipped school for a full day", "I skipped some classes", "I came to school late" in the last two weeks of school (OECD, 2023). The Cronbach Alpha internal consistency coefficient of the scale was calculated as 0.680. Since this value is close to the generally accepted value of 0.70, the internal consistency of the scale was considered sufficient.

3.4. Analysis of Data

In this study, parametric techniques were used because the distribution of the data was normal. The analyses were performed on data collected from 6947 students. The analysis of PISA 2022 data was performed using percentage, frequency, mean, Pearson correlation analysis and multiple regression analysis techniques.

A Likert-type four-point rating scale was used in the scales used in the study. The options were analyzed by giving the values 4, 3, 2, 1 from positive to negative. However, in the PISA 2022 data, the items in the sense of belonging to school scale were ranked as 4, 3, 2, 1 from negative to positive. This issue was taken into consideration in the comments. The value ranges given in Table 1 were used in the comments to be made in terms of averages.

Table 1

Strongly Agree / Five or more times	3.26 – 4.00
Agree / Three or four times	2.51 – 3.25
Disagree / Once or twice	1.76 – 2.50
Strongly Disagree / Never	1.00- 1.75

4. FINDINGS

Under this heading, the findings obtained from the research are presented and interpreted in tables.

4.1. Perceptions of School Climate, Sense of Belonging to School and Absenteeism of the Students Participating in the Research

Table 2 includes the mean and standard deviation values showing the perceptions of school climate, sense of belonging to school, and absenteeism of the students participating in the study.

Table 2

Descriptive Statistics for School Climate, Sense of Belonging to School, and Student Absenteeism Variables

Variables	min.	max.	$\bar{x}$	ss
Sense of Belonging to School	1,00	4,00	2,16	,660
Student Absenteeism	1,00	12,00	5,00	2,173
School Climate	1,00	4,00	2,80	,609

According to Table 2, the sense of belonging to school is at the "I agree" level ($\bar{x}$=2.16). This situation shows that although the students' sense of belonging to school is at the "I agree" level, it is not high. The average score of student absenteeism is seen as 5 days. However, when the minimum and maximum values are examined, it is understood that some students have lower and some have higher absenteeism. It was determined that the school climate scores are at the "I agree" level ($\bar{x}$=2.80). On the other hand, it can be said that the students' perception of school climate is not very high.

4.2. The Relationship Between School Climate, Sense of Belonging to School and Student Absenteeism

Table 3 contains data showing the relationship between school climate, sense of belonging to school and student absenteeism.

Table 3

The Relationship Between School Climate, Sense of Belonging to School and Student Absenteeism Variables

Variables	1	2	3
1. Sense of Belonging to School (1)	1000		
2. Student Absenteeism (2)	-,040*	1000	
3. School Climate (3)	,186*	-,104*	1000

According to the data in Table 3, a negative (r=-0.040) significant relationship was found between "sense of belonging to school" and "student absenteeism". Accordingly, as students' sense of belonging to school increases, their absenteeism decreases. In addition, a positive (r=0.186) significant relationship was observed between "sense of belonging to school" and "school climate". A negative (r=-0.104) significant relationship was found between "student absenteeism" and "school climate". Accordingly, as students' positive perception of school climate increases, their sense of belonging to school increases and their absenteeism decreases.

4.3. Prediction Level of Absenteeism by School Climate and Sense of Belonging to School

The level at which school climate and sense of belonging to school predict student absenteeism is presented in Table 4.

Table 4

Multiple Regression Analysis Results on the Effect of School Climate and Sense of Belonging to School on Student AbsenteeismOkul

Predictor Variables	R	R²	F Change of P	B	Standard Error	β	t	p
Standard				6.191	.147		41.997	.000**
Model	.106	.011	.00*					
School Climate				-,070	,008	-,100	-8,349	,000*
Sense of Belonging to School				-,014	,008	-,022	-1,821	,069

Dependent Variable: Student Absenteeism

According to the results of the multiple regression analysis conducted in order to determine the predictive levels of the independent variables school climate and sense of belonging to school on the dependent variable student absenteeism; school climate and sense of belonging to school together explain 1.1% of the variance in the student absenteeism variable. The data in Table 4 show that the model is significant (R=.106, R2=.011). When the significance levels of the regression coefficients are examined; it was determined that school climate is a significant and negative predictor of student absenteeism scores (β = -0.100, p< .01). This finding reveals that absenteeism decreases as the school climate is perceived positively. Creating an environment in which students feel safe, supported and motivated at school can be considered as a factor that reduces absenteeism. However, when it was included in the analysis together with school climate, it was understood that sense of belonging to school did not significantly predict student absenteeism scores (β = -0.022, p>.05).

5. DISCUSSION, CONCLUSION AND RECOMMENDATIONS

In this study, the relationships between school climate, sense of belonging to school and student absenteeism were examined. According to the data obtained, the students' perception level of school climate is slightly above average. This finding shows that students generally perceive their schools positively, but an ideal climate is not provided for all students. This situation is consistent with the

studies in the existing literature emphasizing the multidimensional structure of school climate (Yenipınar and Yıldırım 2022; Charlton et al., 2021; Rudasill et al., 2018; Cohen et al., 2009; Orpinas and Horne, 2009; Loukas, 2007). It has been frequently emphasized in the literature that students' positive perception of the school climate is closely related to the meeting of their psychological needs such as trust, support, respect, etc. (Akbaba and Erdoğan, 2024; Wang and Degol, 2016; Thapa et al., 2013). The students who participated in the study had a moderate sense of belonging to the school. The sense of belonging is directly related to students feeling valued and accepted in the school environment (Marksteiner and Kruger, 2016; Goodenow, 1993). Osterman (2023) also emphasized that students' sense of belonging in the school community is associated with positive behavioral outcomes such as motivation, participation, etc. In the study, the average student absenteeism was found to be 5 days; however, the high standard deviation value shows that this period may be much longer for some students. Absenteeism is related not only to individual motivation but also to the physical and psychological environment of the school (Kearney et al., 2020; Yılmaz et al., 2020). This finding indicates that absenteeism may be a more systematic problem, especially in at-risk groups (Stokes et al., 2024; Önder, 2017; Gökyer, 2012).

A negative and significant relationship was found between the sense of belonging to school and student absenteeism. This result reveals that students with a high sense of belonging are less likely to be absent (Faga, 2025; Kaçar, 2024; Gökdal and Düşünceli, 2019). The sense of belonging allows students to see themselves as part of the school community, which reduces their behaviors of withdrawing from school (Hassard et al., 2024; Cinar and Nayır, 2022; Sarı and Özgök, 2014). Finn (1989) suggested in his school engagement model that students' psychological and behavioral participation in school is a factor that reduces absenteeism and school dropout. According to OECD (2023) data, absenteeism rates are higher in students with a low sense of belonging.

A positive and significant relationship was found between the sense of belonging to the school and the school climate. This finding is consistent with the existing literature (Sayılır et al., 2024; Encina and Berger 2021; Kızıldağ et al., 2017; Mart, 2013). A supportive and inclusive school environment increases students' emotional attachment to the school (Ahn and Davis, 2023). It can be said that in an environment where students feel valued, accepted and safe, their sense of belonging develops, thus strengthening their positive attitudes towards the school (Barringer and Gu, 2023; Gillen-O'Neel, 2021). Korkmaz (2011) also emphasized that the school climate plays a decisive role in students' sense of

belonging. In this context, it can be said that a positive school climate contributes to both psychological and academic development by increasing students' commitment to the school (Chiu et al., 2016; Bektaş and Nalçacı 2013; Cemalcilar, 2010).

A negative and significant relationship was found between student absenteeism and school climate. This finding shows that as the school climate becomes more positive, student absenteeism decreases. A supportive and structured school environment encourages students to attend school regularly by ensuring that they feel safe and valued at school (Adıgüzel and Karadaş, 2013). Rumberger and Thomas (2000) stated that the school environment has an impact on students' tendency to withdraw from school. Factors such as teacher-student relationships, classroom management, and understanding of discipline can directly affect absenteeism behaviors (Şenel and Buluç, 2016). Saputra et al. (2020) emphasized that when the school climate deteriorates, students' interest in school decreases and absenteeism increases. In this context, improving the school climate can be an important strategy in combating absenteeism (Kipp and Clark, 2022).

According to the results of the multiple regression analysis obtained in this study, school climate is a significant and negative predictor of student absenteeism. This finding is consistent with the data in the meta-analysis study of Thapa et al. (2013); according to the research, a positive school climate reduces absenteeism rates and encourages students to spend more time at school. The research conducted by Gottfredson and Gottfredson (2001) showed that a positive school climate increases student engagement and reduces discipline problems and absenteeism. Similarly, Sağlam and Dönmez (2016) emphasize that the social environment and climate of the school have a direct effect on student participation and attendance. In the study conducted by Özdemir et al. (2024), it was found that positive school climate positively affects students' attitudes and motivations towards school. According to the results of the multiple regression analysis, the fact that the effect of the sense of belonging to school on student absenteeism is not significant differs from the results reported in some studies. Many studies argue that the sense of belonging plays an important role in students' school attendance (Gopalan and Brady, 2020; Wang and Eccles, 2012; Libbey, 2004; Willms, 2003).

When the study results are evaluated, it is recommended that policies be developed to improve the school climate. In particular, teachers need to have a supportive and understanding attitude towards students. It is very important for school administrators to actively take on the leadership role in order to create an

atmosphere that prioritizes trust, justice and participation in the school. Early warning systems and guidance practices should be implemented for students who show absenteeism tendencies. In order to increase the sense of belonging, club activities, student council practices and social activities that provide students with opportunities to take responsibility should be encouraged.

This research is important in terms of quantitatively examining the relationships between school climate, sense of belonging to school, and student absenteeism. Since the research is based on PISA 2022 data, longitudinal effects cannot be observed. Therefore, it is recommended that the relationship between these variables be subject to longitudinal studies. In addition, there is a need to examine students' belonging and absenteeism experiences in more depth with qualitative research. Comprehensive models that address the reasons for absenteeism within the framework of family, social environment, and individual psychological variables can be developed. New contributions to the literature can be made by examining whether these variables differ between different school types (vocational high school, Anatolian high school, private school, etc.) through comparative studies.

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EXTENDED ABSTRACT

This study aims to examine the relationships between school climate perceptions, sense of belonging to school, and absenteeism levels of high school students in Turkey in light of PISA 2022 data. The main objective of the study is to explain the effects of students' perception of school and sense of belonging to school on absenteeism behaviors and to reveal the role of these factors in the education system. In this context, students' perceptions of school climate, sense of belonging to school, and absenteeism levels were determined; the relationships between the variables were analyzed.

The research was designed with a correlational survey model and a descriptive survey model was also used. The universe of the study consisted of high school students across Turkey, and the sample consisted of 6947 students from 196 schools participating in the PISA 2022 application from Turkey. The data set was obtained from the public PISA 2022 database published by the OECD, and the analyses were performed after missing data were eliminated. Data were collected with student responses from the "School Climate", "Sense of Belonging to School" and "Absence" scales. The Cronbach Alpha internal consistency coefficients of these scales, each of which has a 4-point Likert-type structure, were determined as 0.695, 0.751 and 0.680, respectively, and it was determined that they had sufficient reliability. Frequency, percentage, mean, Pearson correlation analysis and multiple regression techniques were used in the analysis of the data.

According to the research findings, it was seen that the students' perceptions of school climate were above the average level and their sense of belonging to school was at the average level. It was determined that the average absenteeism level was around 5 days. As a result of the correlation analyses; a negative significant relationship was found between the sense of belonging to school and absenteeism, a positive significant relationship between school climate and belonging to school, and a negative significant relationship between school climate and absenteeism. According to the multiple regression analysis; school climate is a significant and negative predictor of student absenteeism. On the other hand, when the sense of belonging to school is included in the model together with the school climate, it does not significantly predict absenteeism.

These results reveal the importance of making school environments constructive and supportive in reducing student absenteeism. It is evaluated that a school environment where students can establish healthy relationships with teachers and feel safe and valued can reduce absenteeism behaviors. It is thought

that the effect of the sense of belonging to the school on absenteeism is not direct, but probably indirectly through mediating variables such as school climate. Therefore, it is recommended that direct and indirect relationships between variables be examined in detail with structural equation modeling in future studies. In addition, it is recommended that student-centered and inclusive school climate practices be disseminated to school administrators and education policy developers.
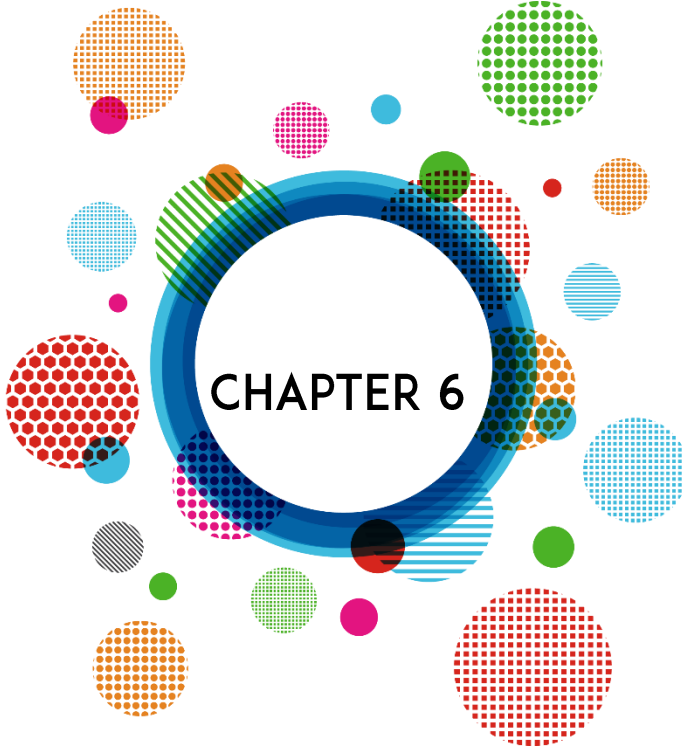
Crunching Foundations: 'Parental Alienation Syndrome'

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Introduction

Joint custody decisions have increased in divorce cases, especially in the 1970s, based on the assumption that the best interests of the child will be taken into consideration. With the increase in joint custody decisions, it was seen that one of the parents disparaged and programmed the other parent to alienate his/her child in order to obtain custody of the child. It has been observed that there are discourses that contradict the child's thoughts about his/her alienated/targeted/rejected parent with behaviors usually called brainwashing, and these discourses affect the child's beliefs about his/her parent (Gardner, 2002, Gardner et al., 2006). Gardner preferred to define this situation as parental alienation syndrome (Gardner, 1985). Gardner began making assessments of disagreements in child custody cases in 1963, and in the early 1980s noticed parental alienation (PA), a condition he had previously described as an undetected disorder. As a result of 25 years of studies on families, Gardner has followed the differences and new developments in this field and stated that there are children who have been separated from their parents for various reasons (emotional abuse, verbal abuse, physical abuse, sexual abuse and neglect) until now (Gardner, 2002). Considering the researches on alienation, it was seen that Wallerstein and Kelly (1976) also had studies on this subject before Gardner. However, Wallerstein and Kelly expressed alienation as adaptation. In children, the anger towards the parent who initiated the divorce from the parents in the divorce process can continue with the separation from the mother or father who initiated the divorce. Thus, children can reject and exclude a parent after divorce. This can often be initiated by the parent who is stronger than the other and sees themselves as victimized, exploited, and betrayed. In this case (Meier, 2009), which is expressed as the child's adaptation to one parent rather than being alienated from one parent after divorce (Meier, 2009), a child may have a tendency to see one parent as good and the other as bad, and may reinforce these opposing thoughts and feelings after divorce. This is a risk for the child to get away from a parent (Wallerstein and Kelly, 1976). Gardner (2002) later defined the concept of parental alienation syndrome as a disorder that occurs in children, especially in custody disputes. PA is seen as one parent scribbling next to the other parent's child, brainwashing the child (making inaccurate suggestions, producing scenarios), and after a while, the child perceives these accusations as true and adds to these scenarios (Gardner, 1999, 2002; Torun, 2011). The alienating parent is pleased with the child's contribution to this unintentional, unaware slander, and this cycle can continue in this way. However, if there is indeed a situation of neglect or abuse, it is not correct to talk about parental alienation syndrome

(Gardner, 2002).

Parental alienation can be seen during or after divorce, in highly conflictual separations (Bernet and Greenhill, 2022; Bernet et al., 2021; Mercer, 2021; Morrison and Ring, 2021; Fidler and Bala, 2010), as well as in non-divorced families (Baker and Verrocchio, 2014). Mercer (2022a) stated that PA can also exist in children who spend equal time with both parents. However, when the studies on PA are examined, it is seen that researches are generally conducted on divorced families. Especially domestic studies are in this direction (Dolanbay, 2022; Torun et al., 2022; Yurdakul, 2022; Uçar, 2022; Ulutürk, 2019; Turgut, 2021).

Method

Based on the fact that there is no systematic review of research on helicopter parenting in the relevant literature, a descriptive qualitative systematic review method was used. In the literature, systematic reviews are defined as "systematic and impartial screening of scientific studies published in that field in accordance with predetermined parameters/criteria, evaluating the validity of the detected studies and combining them by synthesis in order to find an answer to a research question designed on a specific subject" (Türker and Bahçeci, 2024). Systematic reviews are characterized by a methodical, transparent, repeatable methodology and presentation.

A comprehensive and systematic search is conducted to find all relevant published studies addressing one or more research questions; the characteristics and findings of the results of this research are systematically integrated and presented (Siddaway et al., 2019).

Çınar (2019) made guiding findings regarding the method and characteristics of the method used in systematic review studies. These findings are given below:

- It ensures that the evidence accumulated in the field is followed by researchers and practitioners.

- Ensures that researchers and practitioners practice evidence-based practice.

- Systematic reviews contain more scientific information.

- It generates stronger evidence.

- It is more comprehensive and repeatable than what is done with a certain method.

- The methods used in the study are clearly stated.

- The research question and sub-questions are determined.

- The criteria used during the selection of studies are clearly stated.

- Issues that need to be investigated in the future can be identified.

- Gaps or insufficient areas in the literature can be identified.

There are a number of process steps in the implementation process of a voluntary compilation method. The process steps of the systematic compilation method are; determining the research problem, determining the addition and subtraction parameters, conducting a literature review, determining the studies to be examined, collecting and analyzing the data, interpreting and writing the results (Gough et al., 2012). This study was carried out considering these process steps.

This literature review aims to examine the phenomenon of parental alienation in national and international scientific journals and theses. It is aimed to obtain insights about the direction of the research, to synthesize the information obtained and to determine the research gaps. This study is expected to fill certain research gaps to some extent by contributing to the body of knowledge on parental alienation in the literature.

Historical Development of Parental Alienation Syndrome

When examined historically, the origin of Parental Alienation Syndrome is found in mythology. In mythology, this syndrome can also be expressed as Medea Complex. It is a disease that emerged from the purpose of revenge with the envy and devotion of the woman, which is defined as the Medea Complex, identified with the spiritual state of Medea, which is reported in the Medea Tragedy written by the Greek poet Euripides. "Although Medea and Iason have two children, Iason leaves Medea and marries the king's daughter. Medea gets very angry after this incident, drowns her own children and throws their bodies in front of her husband. " The killing of children by their parents is called filisid.

Parental alienation syndrome is actually a different concept from philistines, but it has similar aspects as it aims to harm children mainly due to some problems or individual ambitions (Torun 2017). Parental Alienation Syndrome behaviors were described by psychoanalyst Wilhelm Reich in 1945. Reich stated that parents with some personal characteristics disparage the other parent and fight on behalf of their children in order to prevent possible narcissistic injuries after divorce (Torun 2017). Increased awareness of sexual abuse among children since

the early 1980s has resulted in a new weapon for parental alienating mothers to use in their custody battles. Mothers have learned that an allegation of sexual abuse results in immediate attention from the court and usually means immediate cessation of visits with the (now accused) parent who is not under supervision (Krivacska, 1989).

Gardner notes that before 1980 it was generally accepted and correctly accepted that children rarely made up allegations of sexual abuse because they had no knowledge of such encounters. The emergence of Parental Alienation Syndrome provides a solid and logical basis for the increase in the number of false allegations of sexual harassment (Gardner 1985). a Gardner (1985) observed and conceptualized the pattern of behavior in children with parental alienation syndrome in general.

Gardner described parental alienation syndrome as "a disorder that occurs primarily within the context of child custody disputes." The primary manifestation of this is the child's campaign of humiliation against a parent with no justification. This programming (brainwashing) results from a combination of the parent's suggestions and the child's own contributions to the defamation of the targeted parent (Baker, 2007).

The concept of parental alienation syndrome has received great attention in the professional literature, including articles in peer-reviewed journals detailing Gardner's original formulations. Mental health professionals and courts agree that children may be subject to alienation from a parent following divorce, which is not guaranteed by the history of the parent-child relationship. This observation may be useful for courts dealing with a child's refusal to visit or deciding how much weight to give to a child's stated preferences regarding custody (Warshak 2001).

In recent years, along with the increase in conflicts within the family and divorces, another social problem is the cases of Parental Alienation Syndrome. The use of children as a trump card in custody conflicts is actually much older, but the importance of this situation has increased with the fact that the terms abuse and neglect have been defined in the modern period and they are a violation of children's rights (Öksüz 2019). Parental Alienation Syndrome is a subject that has been researched and defined by many researchers. On the other hand, it is seen in many custody cases, but it has not gained a place in the DSM created by the American Psychiatric Association or the ICD created by the World Health Organization.

Parental Alienation Syndrome Levels

Parental alienation syndrome can occur at different levels in children. Depending on the severity of alienation, mild, moderate or severe alienation may occur.

Mild Parental Alienation Syndrome

According to Gardner, it is important to distinguish between mild, moderate and severe parental alienation syndrome in the implementation of court decisions and therapeutic interventions. In mild cases, the alienating parent can praise his/her own parenting to the child in some ways and express his/her past negative experiences with the target parent. Although some parental alienation tactics are used at this level, children can continue to meet and communicate with the target parent without any problems (Gardner 2002). The child has a fairly healthy relationship with the programming parent and often participates in the smear campaign to maintain a primary emotional bond with the preferred parent. Parental alienation syndrome in this category can often be mitigated by the court confirming that the preferred or primary parent will retain custody (Rand 1997). In mild cases, not all of the symptoms in Gardner's study may be seen. When mild cases progress to moderate or severe, it is highly likely that most (if not all) of the symptoms are present (Gardner 2002).

Moderate Parental Alienation Syndrome

In moderate parental alienation syndrome, there are significant struggles with visitation. The child often exhibits difficulties in transitioning between homes, but may eventually settle down. The bond between the alienated parent and child is still healthy, despite their shared belief that the target parent is somehow inferior. At this level, stronger legal interventions are required and a therapist who can monitor the visits and report to the court on the non-implementation of the visit is recommended. The threat of sanctions against the alienating parent may be required to ensure compliance (Rand 1997).

In moderate parental alienation syndrome, failure of the system to implement appropriate levels of court decisions and therapeutic interventions may put the child at risk of developing severe parental alienation (Rand 1997). In some cases, it is necessary to seriously consider transferring custody to the alienated parent so that the child is not dragged into a severe level if measures fail (Gardner 1985).

Severe Parental Alienation Syndrome

In severe parental alienation syndrome, the child is fanatical in his hatred of the target parent. The child may refuse to visit, make false claims of personal

harassment, and threaten to flee, commit suicide, or commit murder if forced to see his father. The mother and child have a pathological bond and are often based on common paranoid fantasies about the father (Rand 1997). At this level, the child can see the target parent as an enemy and accompany slander campaigns (Gardner 2002). Gardner believes that if the target parent is available, the only effective solution in severe syndrome is to give custody to the alienated parent (Gardner 1985).

In a study on parental alienation, it was observed that 69.4% of the children of families where the parents were mutually hostile to each other experienced severe alienation, while 56.3% of the children did not have alienation behaviors in cases where the parents did not show hostility to each other (Turgut 2021). It is seen that the discourses and behaviors of the parents towards each other have an effect on the parental alienation syndrome and can increase the levels of the syndrome.

How to Understand Parental Alienation

Parental alienation, which is seen as a phenomenon, has been described as a syndrome by Gardner (Bernet and Greenhill, 2022). However, many researchers preferred to use the concept of parental alienation without syndrome, and then its use as parental alienation increased (Gardner, 2002). In order to determine PA, evaluation forms containing various criteria, models and strategies (Baker, 2018; Baker and Chambers, 2011; Bernet and Greenhill, 2022; Gardner, 2002), measurement tools have been developed (Baker and Chambers, 2011; Baker et al., 2012; Balmer et al., 2017; Huff et al., 2017; Laughrea, 2002; Mone and Bringen, 2012; Rowlands, 2018; Sirbu et al., 2020). According to Gardner (2002), the presence of parental alienation syndrome should be assessed according to the following eight criteria:

Smear Campaign

2. Basing it on a weak, absurd and meaningless relationship,

3. Lack of contradictory feelings towards the target parent in the child,

4. The phenomenon of independent thinkers,

5. Taking the side of the alienating parent in parental conflict,

6. Being cruel and not feeling guilty in exploitative behaviors towards the alienating parent,

7. Existence of borrowed scenarios,

8. Spread of hostility to friends and relatives of the alienating parent.

According to the severity of PA (low-moderate-high), the number and frequency of the above items differ in children (Gardner, 2002). When the mild level of PA is experienced, alienation behaviors are seen, but the child can continue to interview both parents. When moderate PA is experienced, the alienating parent's behaviors are much more evident and the child resists rejected parental visits. In severe PA, the child hates his/her targeted/rejected parent and refuses to visit him/her and may threaten his/her parents to run away if he/she is forced to visit (Baker, 2005; Baker and Darnall, 2007). In terms of judicial practice, determining the causes of alienation in the child is very important in order to organize the child's interview calendar with the parent (Bernet et al., 2020). It has been stated that even in children with severe PA and children whose parents are in the process of divorce, there is hope that their parents will reunite (Baker and Darnall, 2007; Wallerstein and Kelly, 1976).

Gardner (1999) stated that eight criteria (Gardner, 2002) can be used to distinguish between the child who has been subjected to neglect and abuse and the child who has experienced PA. In addition, he stated that post-traumatic stress disorder symptoms are generally observed in children who experience neglect and abuse. Due to the inadequacy of empirical studies on PA, Baker and Darnall (2007), in their study in which Gardner evaluated eight criteria for PA, concluded that the criteria specified by the children of alienated parents were mostly exhibited and contributed to the empirical studies. Based on the research results obtained by Baker and Darnall (2007), two approaches have been proposed to evaluate PA. The first of these approaches is a general judgment that the child rejects the parent who does not deserve to be rejected in an effort to please the alienating parent. The second approach is to create a checklist to determine PA as mild, moderate, and high severity, which includes Gardner's (2002) eight criteria. At this stage, it is recommended to conduct interviews with the child and both parents in order to make an impartial evaluation. Considering the proposed models for determining the presence of parental alienation, Baker's (2018) four-factor model is seen. In this model;

• There has been a positive relationship between the child and the parent with whom he/she has experienced alienation,

• There is no bad behavior (such as neglect and abuse) towards the child by the rejected parent (RP),

• Preferred parent engaging in alienating behaviors [Baker Strategy Scale including 17 primary alienating behaviors (Baker & Chambers, 2011)],

• The presence of behavioral symptoms of alienation in the child is stated as [Gardner's (2002) 8 criterion].

The five-factor model proposed by Bernet and Greenhill (2022) in determining PA is as follows;

• The child avoids a relationship with a parent, refuses contact with him/her,

• Rejecting his/her parent when he/she has had a positive relationship with his/her parent before,

• The rejected parent has not engaged in negligent and abusive behavior,

•Alienating parent engaging in alienating behaviors [17 Baker Strategy Scale including primary alienating behavior (Baker & Chambers, 2011)],

• The presence of reflections of alienating behaviors in the child [Gardner's (2002) 8 criterion].

Considering these models proposed to determine the existence of PA, it is seen that the child must reject one of his parents in order to talk about the existence of PA. The different factor between the two models is that the child refuses contact with the parent, which is in the five-factor model. The alienating behaviors in the Baker Strategy Scale, which is stated to be applied to the RP and the child by targeting the parent (RP) in both models and rejected by the preferred parent (PP), are stated as follows;

• Strategy 1: Bad words

• Strategy 2: Limiting contact of RP with the child

• Strategy 3: Interfering with the child's communication of RP

• Strategy 4: Interfering with symbolic communication of RP with the child

• Strategy 5: If the child has a positive relationship with RP, withdraw the affection shown to the child

• Strategy 6: Tell the child that the targeted parent does not like him/her

• Strategy 7: Forcing the child to choose one of their parents (PP)

• Strategy 8: Create the impression that the target parent is dangerous

• Strategy 9: Trust the child (telling the child that the PP trusts him/her not to tell what he/she says about RP)

• Strategy 10: Forcing the child to reject the targeted parent

• Strategy 11: Ask the child to secretly observe the targeted parent

• Strategy 12: Ask the child to keep secrets from the target parent

• Strategy 13: Directing the target parent to address him/her by name (telling him/her not to use the words Mother/Father)

• Strategy 14: Insist on calling step-parents mother/father

• Strategy 15: Keeping medical, academic and other important information from the RP/Keeping the name of the RP away from medical, academic and other relevant documents

• Strategy 16: Try to change the child's name

• Strategy 17: Increasing dependence on PP

However, Morrison and Ring (2021) stated that experts who make decisions about child custody should know the eight symptoms and 17 PA strategies (Baker and Chambers, 2011) stated by Gardner and use a reliable measurement tool. In addition to the alienation criteria seen in children in order to determine PA, it was emphasized that evaluating the behaviors of PP together is important in terms of making the right decision. In particular, it has been stated that this is one of the evaluation criteria of researchers on PA (Bernet et al., 2021).

It has been stated that valid and reliable measurement tools are not sufficient to determine the presence of PA (Baker and Darnall, 2007; Bernet et al., 2020; Kelly and Johnston, 2001; Morrison and Ring, 2021). Although there are measurement tools and models developed in the international literature, considering that the number is not sufficient, it is possible to say that this deficiency is even more in the national literature. In the national literature, it was stated that the Rowlands Parental Alienation Scale (Rowlands, 2018) was translated into Turkish by Uçar (2022) in order to determine PA, but validity and reliability studies were not conducted. In addition, it was observed that the Baker Alienation Scale (Baker et al., 2012) was translated into Turkish by Üner-Altuntaş (2017) and the Parental Alienation Syndrome Questionnaire was created by Turgut (2021). When the beloved, favored parent engages in alienating behavior toward the other parent, the child inevitably becomes alienated from the other parent. Bernet (2021) evaluated the differences of opinion between researchers who advocate the existence of PA and researchers who have a critical approach to the diagnosis of PA. He stated that when both parties try to understand each other's ideas, they will realize their common desire to protect children from domestic violence and abuse and they can take steps together in this direction (Bernet, 2021).

Effects of Parental Alienation Syndrome on Children

It has been observed that children exposed to PA experience many emotional and behavioral problems compared to children who are not exposed to PA (Johnston et al., 2005). Alienated children are in a riskier group than other children in terms of low self-confidence, addiction to TE, smoking and alcohol use, and exhibiting risky sexual behaviors (Kruk, 2018). However, they may experience decline in emotional development, insecurity, social anxiety (Baker, 2005), low self-esteem, and sleep disturbance (Baker and Ben-Ami, 2011; Baker and Darnall, 2007).

There are many retrospective studies on PA studies examining individuals exposed to PA in childhood. Considering the studies conducted, it has been observed that these individuals experience psychological and behavioral problems in adulthood (Aloia and Strutzenberg, 2019; Baker, 2005; Laughrea, 2002; Mone and Biringen, 2012; Verhaar et al., 2022). Adults exposed to PA in childhood can bring along problems such as depression and trust problems (Sun et al., 2021), trauma response, anxiety disorder, body image problems, eating disorder, post-traumatic stress disorder, mental health problems, emotional pain, maladaptive coping, addiction, psychosomatic symptoms, personality disorders, attention deficit and hyperactivity, suicidal ideation and self-harm, risky sexual relations, shame and guilt, hopelessness, decreased self-esteem, loneliness (Verhaar et al., 2022), parent-child communication anxiety and low self-esteem, psychological and behavioral problems (Aloia and Strutzenberg, 2019), alcohol and substance use, learning problems, somatic complaints, alienation from one's own child and divorce (Baker and Verrocchio, 2014). Insecure attachment to close relatives and peers is also a problem in these individuals (Laughrea, 2002). In RPs, it is possible to encounter many different problem areas such as low life satisfaction, depression, and unjust world belief (Tavares et al., 2020). PA behaviors can sometimes be reflected on grandparents. It has been stated that grandparents witness PA behaviors such as brainwashing, controlling communication, emotional manipulation, prohibiting information, denial, questioning, threatening communication, keeping secrets, blocking on social media, encouraging disrespect, rejecting gifts/celebration cards, manipulation during family unity, making false claims (Bounds and Matthewson, 2021).

Effects of Parental Alienation Syndrome on Adults

The alienating parents are the parents who live with the child after the separation of the spouses. This parent may spend a lot of time with the child. On the other hand, the child is usually dependent on himself. Therefore, it is not

difficult for the parent with whom the child is with to affect the child. It subjects the implicit or explicit children to a programming for the target parent. She sees the other parent as responsible for the end of their marriage. Therefore, he acts with the ambition of revenge. There may be logical or irrational reasons for his anger, but it can be destructive to express his anger through children (Torun 2017).

In one study, 59% of the total sample of targeted parents stated that parental alienation affected their financial status and work capacity. Lawyers for parental alienation have mentioned excessive amounts of money spent on matters such as court procedures or alimony. It was determined that 33% of the participants mentioned that they were physically affected by alienation. The most common physical problems are health problems, weight loss, weight gain and headaches in general (Balmer et al., 2017).

In another study conducted on targeted parents in Parental Alienation Syndrome, depression (33%), stress (23%), anxiety disorders (21%) and post-traumatic stress disorder (15%) were reported as a result of alienation by targeted parents. Targeted parents also mentioned that they were affected by an adjustment disorder (4%), panic attack (2%), low self-esteem (2%), lack of confidence (2%), and loss of identity (2%). Targeted parents, in their own words, told their children that they experienced a variety of negative emotions, such as feeling frustrated, sad, or overwhelmed by alienation. They no longer felt pleasure and joy in life, but felt rejected, embarrassed, exhausted, guilty, confused, broken, angry, isolated, and powerless (Maturana et al. 2020).

Alienating parents need other people in the struggle for life, similar to their infancy, and they are completely focused on this. It is an important issue for these individuals to want to gain control over their children. On the other hand, alienating parents are egocentric in this process, similar to children. These parents are just receiving oriented and don't think about giving. Their empathy is weak and they are not compassionate. They do not listen to the advice of their family, friends, experts or judges to end the alienation against them (Öksüz 2019).

In their study, Balmer (2017) reported that mothers who were targeted contrary to the general opinion were exposed to significantly more alienating humiliation tactics than targeted fathers. This finding suggests that alienating fathers may be more aggressive than initially thought in their approach to undermining the targeted mother's authority over her children. Parents who have been subjected to alienation feel helpless and powerless. Since he/she is away from his/her children, he/she thinks that he/she cannot do anything against the

efforts of the alienating parent. He can't find anyone to impress the children. He doesn't know how to end his ex-wife's brainwashing efforts. While some of the alienated parents state that they expect everything from them about the other parent, the vast majority of them state that they do not expect this much from them. He thinks of the court stage as the hope of solving the problems and seeks legal remedies (Torun 2017). Children who are exposed to alienation can also be affected by this situation in their later years and when they become adults.

Verrocchio et al. examined the effect of alienation on depression in their study with 491 adults. According to the results of the research, it is seen that the mild and moderate depression levels of children exposed to alienation in childhood in adulthood are higher than those of adults who are not exposed to alienation, and those who are exposed to alienation in childhood result in divorce (31.3%) compared to those who are not (Verrochio et al. 2019).

In a study, parents evaluated their alienation status as highly stressful, threatening for their current and future well-being, and also an important determinant for their future well-being. The fact that targeted parents feel their well-being is significantly threatened due to their exposure to parental alienation tactics points to the need for further support services for targeted parents. This need is emphasized by the finding that the sample generally experiences moderate anxiety and depression (Balmer et al. 2017).

How Can Parental Alienation Syndrome Be Prevented?

April 25 is aimed to prevent this syndrome by trying to be kept on the agenda with actions that will raise awareness as "Parental Alienation Syndrome Awareness Day" all over the world. (Baker & Andre, 2008).The question of what should be done at this stage arises.

One parent's persistent criticism and disparagement of the other parent in the presence of the child may cause the child to experience trauma. Various intervention programs/psychoeducations should be implemented to prevent such insulting statements. Therapeutic interventions such as parenting, co-parenting, alienating behaviors, and the use of appropriate language in communication with the child are needed (Geffner & Sandoval, 2020).

Since there are situations in which the parent's immediate environment and family are included in parental alienation, it is very important to implement psychoeducation programs that include PA and PA behaviors and include family members such as grandparents/fathers (Bounds and Matthewson, 2021).

It is seen that the reunification counseling approach to PA intervention is

frequently discussed. This approach is a psychological counseling approach that aims to improve the situation of a child's parent's manipulative attitudes and discourses, distance from the other parent, refusal to meet with him/her, and to repair the relationship between the child and RP (Avalle et al., 2022; Mercer, 2021). Although these consultations mostly take place in the office environment, they consist of an intensive treatment process that lasts from a few days to a few weeks (Mercer, 2022b) and the mental health professional who carries out the process is more directive (Smith, 2016). Distinguishing PA from other mental problems such as anxiety is very important for the efficiency of the trainings to be given on this subject. Addressing the process based on specific diagnoses will increase the effectiveness of the process (Mercer, 2022b).

Conclusion and Discussion

Parental Alienation (PA) is a concept in which the work of physicians, mental health professionals, lawyers, and social workers can intersect. It is thought that the management of the EY phenomenon is very critical in order to take into account the best interests of the child. In order to prevent and combat PA, it is necessary to increase awareness of this phenomenon and to ensure that parents, children and close relatives receive adequate psychological counseling services after a lack of communication or divorce for the family (Isailă and Hostiuc, 2022).

When the literature on Parental Alienation Syndrome is examined, it is noteworthy that the studies are insufficient. Dolanbay's (2022) thesis study examining the post-divorce life experiences within the framework of parental alienation syndrome, Turgut's (2021) thesis study examining the effect of parental alienation syndrome on depression levels in divorced families, Uçar's (2022) thesis study examining the experiences of fathers who are not in custody within the framework of divorce and subsequent parental alienation are among the the thesis studies. Among these studies, Dolanbay's (2022) research subjects were parents who divorced when they were 18 years old, and now they are adult children over 18 years old, and the researcher addressed the issue through children.

Turgut's (2021) study is a quantitative study in which data were collected through a questionnaire, and the effect of parental alienation syndrome on depression levels was examined in the study. In the study of Uçar (2022), it is seen that fathers who do not have custody handle their divorce and post-divorce experiences within the framework of alienation from the parent. In this study, it was aimed to evaluate the post-divorce experiences of adolescent children and their parents in divorced families within the framework of parental alienation

syndrome, and for this purpose, separate interviews were conducted with both parents and children, and a comprehensive research was conducted. On the other hand, with the study, it was also possible to take and compare the opinions of the participants from both sides, and the statements of the parties with and without custody were handled separately.

On the other hand, it is seen that this issue is not much focused on in the field of forensic social work. It has been observed that previous studies on the subject are mostly based on the quantitative method, and the fact that this study will be conducted with a qualitative method has been a point that distinguishes the study from a limited number of other studies. The research is important in terms of the fact that the experiences of adolescent children between the ages of 12-17 and their parents after divorce in divorced families will be examined in depth in terms of both parents and adolescent children, which is one of the problems that other professionals, especially social workers working in the forensic field, may encounter. Parental alienation can have serious effects on the development of children, especially children in families with divorced parents. Today, the family structures that disintegrate as a result of increasing divorces and their reflections on children are a situation that needs to be emphasized a lot. After the divorce, children may face many difficulties and negative situations (Öngören 2017; Tarhan 2017; Kara 2019; Feyzioğlu and Kuşçuoğlu 2011).

It is important for their future that children do not become victims and are not affected by conflicts between their parents. As a result, studies on parental alienation should increase and society should be made aware of this issue. It is thought that this study may contribute to raising awareness.

Recommendations

Contributions to the literature can be made by conducting studies with different research methods on parent alienation.

Again, the effects can be made more concrete by addressing the issue of parental alienation with different sample types.

April 25 Parental Alienation Awareness Day can be organized in more specific ways.

In mass media such as television and radio, public service announcements can be made to raise awareness of the society about alienation from parents.

Studies that prevent parental alienation syndrome can be carried out by sociologists, psychologists and psychological counselors in family medicine.

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CHAPTER 7
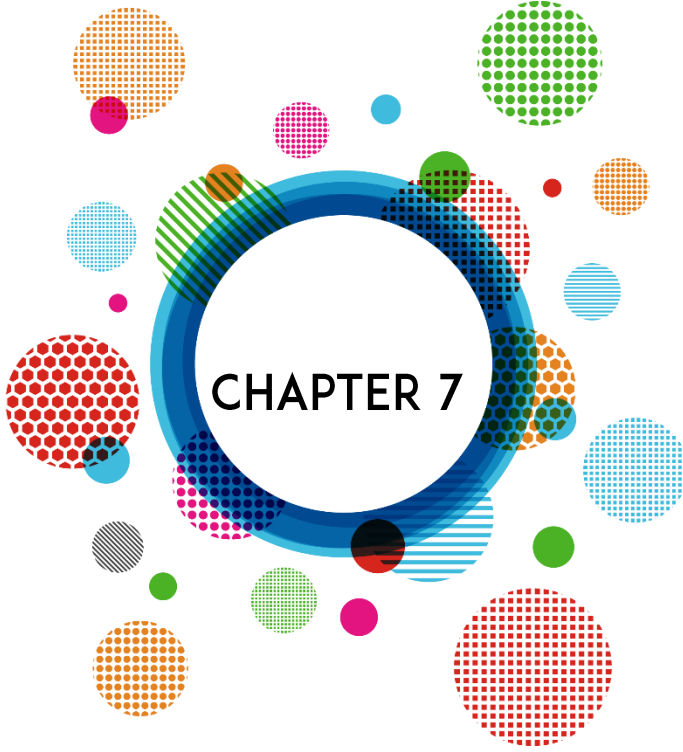
Breadth Versus Depth: On Sample-Sample Selections Qualitative and Quantitative Approaches

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There are many differences between quantitative and qualitative research approaches, in addition to differences in philosophical/theoretical perspectives. One of these important differences is the difference in sampling approaches. In fact, Patton (2018) states that "perhaps nothing better illustrates the difference between quantitative and qualitative methods than the different logics underlying sampling approaches" (p. 230). In research methodology, sample selection constitutes a fundamental part of both quantitative and qualitative research and has a decisive impact on the validity and reliability of the data to be obtained. In quantitative research, random sampling methods are generally preferred to obtain systematic and numerical data. This method allows statistical analyses to be conducted with individuals randomly selected from a large population. On the other hand, in qualitative research, sample selection is more flexible; since the aim is to obtain in-depth information, detailed and contextual sampling using phenomenological or phenomenology-based methods is at the forefront. While both methods have their own strengths, sampling strategies and their applicability are shaped by the purpose of the research (Akdemir & Kılıç, 2021). This review study aims to discuss quantitative and qualitative research approaches through sample selection and sample size.

Sample Selection

It may not be possible to work with everyone, everywhere and doing everything in every study. Because there are many participants to interview, many activities and cases to observe, many websites to visit and countless documents to read. Therefore, the researcher may have to choose and limit what, whom, where and when to observe or which participants to interview. For this, there is a need to select a sample (Glesne, 2015; Merriam, 2018; Miles & Huberman, 2019; Taherdoost, 2016).

Sample selection, which is an important point of distinction for both quantitative and qualitative research and the selection of the sources from which the research data are obtained, is extremely important in terms of achieving the desired purpose of the studies. Merriam (2018) states that there are two basic types of sampling and divides them into probability and non-probability sampling. Patton (2018) names and classifies sampling as random probability sampling and purposive sampling, while Gliner, Morgan, and Leech (2015) name it as probability sampling and non-probability based sampling. Patton (2014) explains the classification of purposive sampling as non-probability based sampling as follows: This is to define qualitative sampling not in terms of what it is (strategically purposive) but in terms of what it is not (non-probability). In this study, the researchers prefer the nomenclature used by Patton (2018).

The name random probability sampling comes from the fact that the logic of random probability sampling is based on probability theories in mathematics (Neuman, 2016). Before explaining random sampling, it is useful to explain some concepts related to sampling. Participant, unit or case refers to the people, objects or entities that are the focus of the study or, in other words, on which the research is conducted, while the target or theoretical universe refers to all participants that the researcher is interested in or all of the individuals, objects or cases that the researcher wants to generalize (Gliner et al., 2015).

In a research, there are two populations: the target population and the accessible population. The target population is the population that is almost impossible to reach and is the ideal choice of the researcher. The accessible population, on the other hand, is the realistic choice of the researcher and is accessible (Fraenkel & Wallen, 2006). Some of the individuals in the accessible population are asked to participate in the research. This group, which is asked to participate in the research by using one of the sampling designs, is the selected sample. All participants from whom data can be collected constitute the actual sample (Gliner et al., 2015). "The word sample refers to the group to which research techniques selected from the whole will be applied in order to understand the whole in a research, while the process of selecting a sample is called sampling" (Türk Dil Kurumu [TDK], 2020). "A sample is a small group that is assumed to represent the universe in order to make generalizations about the universe" (Gliner et al., 2015, p. 115).

Random sampling is a type of sampling in which each individual in the universe has an equal chance of being selected, which represents the universe and allows generalization to the universe (Creswell, 2017). Randomness means that everyone in the relevant population has an equal chance of being selected for inclusion in the study. A randomly selected sample serves an important purpose: it increases the likelihood that the sample accurately represents the selected population, which allows the results of the study to be generalized to a larger population (Maykut & Morehouse, 2005). The logic and power of random sampling is based on statistical probability theory. The purpose of random/probability-based sampling is to generalize from a sample to a population and to control for selection errors (Merriam, 2018; Neuman, 2016; Patton, 2018).

The parameters required to construct a random sample are quite restrictive but allow the researcher to perform a variety of inferential hypothesis tests using a variety of statistical techniques. The most common type of random probability sampling is the simple random sample. Simple random sampling most closely approximates the ideals in probability sampling. To obtain a simple random

sample, every element in the entire population must have an equal and independent chance of being included in the final sample to be examined. Simple random sampling usually starts with a complete list of every element in the entire population to be surveyed. Once the list of all elements has been created, the size of the sample must be determined. Once this has been accomplished, a table of random numbers, computer or other procedure for random selection of elements from the list will be applied (Berg, 2001).

Table 1 Quantitative Sampling Strategies and Objectives

Sampling Type	Purpose
1. Simple random sampling	Allowing generalization of the sample to the population it represents.
2. Stratified random and cluster sampling	Increase reliability in making generalizations to specific subgroups.

The quantitative sampling methods and the purpose of the methods are taken from Patton, (2018). Simple random sampling typically aims to produce a representative sample. The process takes place by drawing subjects from a defined population in such a way that each unit in that population has exactly the same chance (probability) as the sample (Berg, 2001).

Stratified random sampling is used when there is a need to ensure that a certain part of the population is represented in the sample. The population (universe) is divided into subgroups (strata) and independent samples are selected from each stratum. In each stratum, a specific sampling method is applied to ensure that a proportion of the entire population is represented. Therefore, the sampling parts in some strata may be different from other parts in the same sample. Stratified sampling can only be used when there is a case for dividing the population into strata (Berg, 2001).

There are many ways to select a sample in the theoretical universe. The main purpose of selecting a sample is to reach a sample that has the characteristics of the universe and has the ability to represent the universe. Obtaining a representative sample largely depends on the use of probability sampling techniques (Gliner et al., 2015).

Random samples, from which generalizations can be made and which are statistically representative, are frequently used in quantitative research (Glesne, 2015). This is due to the assumption that the population is normally distributed.

It is one of the basic assumptions on which quantitative methods are based that the sample selected from a normally distributed universe with the correct statistics can be generalized to the universe. "Since generalization is not the aim of qualitative research in the statistical sense, probability sampling is not necessary in qualitative research" (Merriam, 2018, p. 76). As Firestone (1993) states, analytical generalization can be derived from qualitative studies, but generalization from the sample to the population cannot be made.

Ethnography, which is one of the designs of qualitative research, does not need to select a sample as it conducts its studies with all people in the population. They interview all the people in a group - a village, an association or a class - and observe all the people and events in a school, a factory or a tribe (Goetz and LeCompte, 1984).

When determining the sample in qualitative research, first of all, it is necessary to define the situation or situations that can be studied within the time and possibilities, that are directly related to the research questions and that include examples related to the subject being studied. Then, a framework that supports the research and can reveal the basic structure of the research should be created. The fact that qualitative research designs are not as rigid as quantitative research designs also shows itself in terms of sampling. Miles and Huberman (2019) express this issue as follows: "Although the sample in qualitative research is determined in advance, it can also develop after the fieldwork begins" (p. 27).

Miles & Huberman (2019) state that qualitative research tends to choose purposive sampling methods rather than random sampling methods, both because the initial definition of the population is limited and because social processes have a logic and context that cannot be interpreted by random sampling. The rationale and power of purposive sampling, which means selecting individuals and places that can provide more willing information to better understand the study problem or focus (Creswell, 2020), lies in selecting information-rich situations for in-depth study. The study of information-rich situations brings insights and in-depth understanding rather than empirical generalizations. These information-rich situations are those in which one can learn a great deal about situations that are fundamental to the purpose of the research, hence the term purposive sampling (Patton, 2018).

Qualitative researchers, on the other hand, begin to build a sample of selected people (or settings) with the aim of gaining an in-depth understanding of some phenomena experienced by a carefully selected group of people. This approach to deliberately selecting people (or settings, organizations) for research

acknowledges the complexity that defines human and social phenomena and the limits of generalizability (Maykut & Morehouse, 2005). "Key features of qualitative sample selection: in contrast to quantitative research, where the context is large and statistical generalization is of great importance, qualitative researchers often work with small samples that are anchored in their context and analyzed in depth" (Miles & Huberman, 2019, p. 27).

Glesne (2015) states, "Different sampling methods allow you to learn different things about your topic. Because each method you choose directs you to specific areas and people" (p. 59), while Maykut and Morehouse (2005) state that there are various strategies for purposive sampling and that the choice of a sampling strategy depends on the focus of the research and the researcher's judgment about which approach will best understand the phenomena under investigation.

"Qualitative research, in general, focuses in depth on relatively small samples, even a single case (N=1), selected in a purposeful way" (Patton, 2018). Purposive sampling methods and their purposes are given in Table 2 below.

Table 2 Qualitative Sampling Strategies and Purposes

Sampling Type	Purpose
1. Oversampling or outlier sampling	To learn about unusual or special findings about the phenomenon of interest or to learn from the unusualness of the phenomenon.
2. Density Sampling	To describe information-laden situations that intensely (but not excessively) reveal a phenomenon.
3. Maximum Diversity (heterogeneity) Sampling	Identify a wide range of situations and important common patterns to identify differences.
4. Homogeneous Sample	Focus, reduce diversity, simplify the main analysis and facilitate group discussions.
5. Typical Case Illustration	To show typical, ordinary, normal or average situations.
6. Critical Situation Sampling	Making logical generalizations and applying knowledge to different situations with convincing critical cases.
7. Snowball or Chain Sampling	To be able to explain different phenomena by reaching from person to person and from person to situations.
8. Criterion Sampling	Identifying situations that meet certain criteria.
9. Theory-based sampling	Theorizing or validating theories.

10. Confirmatory or Falsifying Case Sampling	Exploring differences and diversities, deepening basic analysis.
11. Stratified Purposive Sampling	Facilitate comparisons and analysis by identifying specific subgroups.
12. Opportunistic or Emerging sample	Taking advantage of situations that arise unexpectedly.
13. Purposive Random Sampling	Reduce bias and increase credibility and trustworthiness.
14. Political or Policy Situation Sampling	Avoiding potential attention by drawing attention to the research or excluding sensitive issues from the research.
15. Easily accessible or convenient Sampling	Choosing what is easy; saving time, money and effort at the expense of knowledge and credibility. The least reliable method.
16. Combination or Mixed Purpose Sampling	Triangulation, flexibility; meeting diverse interests, multiple objectives and needs.

Table 2 shows the qualitative sampling methods adapted from Patton (2018) and Miles and Huberman (2019) and their purpose. Patton (2018) states that "The basic principle common to all these strategies is that much can be learned about the importance of information-rich situations and thus selecting situations worthy of in-depth study" (p. 242). Creswell (2020) states that there are three aspects of purposive sampling in qualitative research that may differ according to the nature of the approach. These are who or what can be selected as a sample, specific sampling strategies, and deciding on the size of the sample to be studied.

Patton (2014), who emphasizes the weakness of convenience sampling strategy and does not recommend using it, wrote a chapter titled "convenience sampling is not purposive sampling" in the 4th edition of his book and stated the five problems of convenience sampling as insufficient/weak information, risky, limited utility, lazy-opportunistic, low reliability and easy to use. In addition, Patton presented 16 purposive sampling strategies -which we also used in our study- in the 3rd edition of Qualitative Research & Evaluation Methods. In the 4th edition, the number of sampling types increased to 40, reflecting the emergence of more specific and detailed strategic options over the last decade. Moreover, due to the large number of options, he divided them into eight categories. These categories are:

- Single Significance Case Sampling Strategies where salient issues and/or salient insights provide rich and in-depth information (n = 1),

- Comparison Sampling Strategies, which select cases to compare and contrast in order to learn about the factors that explain similarities and differences,

- Group Characteristics Sampling Strategies where cases are selected to create a specific information-rich group that can reveal and illuminate important group patterns,

- Concept and Theoretical Exemplification Strategies, in which work samples are selected that are examples of the concept or construct that is the focus of the research in order to illuminate the theoretical ideas of interest

- Instrumental use multi-stage purposive sampling is used to understand phenomena and produce generalizable findings that can be used in applied multi-stage studies to inform changes in practices, programs and policies,

- The open-ended nature of exploratory qualitative research means that sometimes you need to generate samples during fieldwork. Sequential and Emergence Focused Sampling Strategies used for situations where one case leads to another in sequence as the investigation progresses,

- Analytically-driven sampling, which aims to add information-rich cases that answer questions raised during fieldwork,

- Stratified or nested samples are samples within samples, which is a strategy within a strategy within a strategy. Combining these strategies and approaches is the category of Mixed, Stratified and Nested Purposive Sampling (Patton, 2014).

The underlying principle for all these strategies is to select information-rich situations that can learn a lot about the focus of the research and are therefore deemed worthy of in-depth study. When determining the sampling strategy, care should be taken to ensure that it is appropriate to the purpose of the study, the resources available, the questions asked and the limitations encountered. This applies to the sampling strategy as well as the sample size (Patton, 2018).

Sample Size

Sample size, how many participants are needed in a scientific study, is one of the most frequently asked questions by researchers. There are many factors that determine the answer to this question. The field of research is one of these factors. While around 1000 participants may be needed for a study in which public opinion is taken, in psychological experiments or drug studies, 10-20 participants in each group may be sufficient. As can be seen from the examples, sample size is closely related to the topic being studied and the preferred research design. In addition, the statistical techniques to be used and the conventions specific to the field/discipline in which the study is conducted are among the factors affecting the sample size (Gliner et al., 2015).

Creswell (2020) states that the question of the size of the sample in the data collection process is an equally important decision as the sample selection strategy. Some sources suggest that the largest possible sample should be obtained within budget and time constraints. This is because, holding other conditions constant, studies with large samples are more likely to find statistically significant differences between groups or relationships between variables (Gliner et al., 2015).

There are two important issues regarding sample size. The first is the ability of the sample to represent the population rather than the sample size. A study group (sample) that cannot accurately reflect the population, no matter how large it is, will lead to results that are quite contrary to the population parameters, that is, it will provide misleading information. Gliner et al. (2015) and Neuman (2016) illustrate this situation in their books with the following example (both books use the same example). Literary Digest, a major United States (US) magazine, surveyed 2.5 million citizens about the US presidential elections in 1936, but made a major error in its prediction of the election results (although the sample was large, it was not representative of the population). It predicted that Roosevelt, who won the elections by a large margin, would lose. This experience of the magazine shows that what is important in sample selection is not the quantity but the ability to represent the population.

The second point is that in research conducted with very large samples, differences or relationships that are not significant in practice and social life may be found statistically significant. If a description of the universe is aimed with values such as mean and percentage, it is necessary to make accurate and precise estimates as much as the conditions allow, and therefore large samples should be used. As a result, the sample size should be large enough to detect a real difference or relationship existing in the population. However, a large study group may make differences or relationships that are not practically significant

statistically significant (Gliner et al., 2015). Table 3 shows sample sizes at various confidence levels.

Table 3 Sample Size-Confidence Level Relationship Table

Population (n)	Sample (n) (%95 confidence level)	Sample (n) (%99 confidence level)
50	44	50
100	79	99
500	217	476
1000	278	907
5000	357	3311
50000	381	8195
100000	383	8925
1000000	384	9706

Adapted from Anderson (1990) (n=number of people).

In probability random sampling, suppose the population is 100 people. Of these, 80 would be needed for random sampling to generalize with a 95% confidence level (80%). If there are 500 people in the program, for the same level of confidence, 217 people should be included in the sample, which is 43% of the population. If there are 1000 people, 278 people (28%) and if there are 5000 people in the population of interest, 357 people should be included in the sample (7%) to reach the 95% confidence level for generalizing the findings. At the other extreme, if there are only 50 people in the program, 44 people need to be included in the random sample to reach a 95% confidence level (88%) (Patton, 2018).

Merriam (2018) states that questions such as how many people to interview, how many places to visit, or how many documents to read make inexperienced researchers anxious about qualitative research. For people who cannot tolerate ambiguity, unfortunately, there are no answers to these questions. Similarly, Patton (2018) states that qualitative research is the best study for people with a high tolerance for ambiguity and reminds that things will get even more ambiguous in the analysis part. Despite all these worrying statements, Creswell (2020) states that it is a general rule of thumb to work with several places or

individuals in a qualitative research, as well as to obtain detailed broad information about each place or individual studied.

The logic of purposive sampling is quite different. Purposive sampling should be judged according to the purpose and logic of the study: In-depth information from a small number of people can be very valuable, especially when situations are rich in information, e.g. Piaget made a major breakthrough in our understanding of how children think by observing two of his own children for a long time and in depth. Similarly, Freud is known to have established the field of psychoanalysis based on fewer than 10 patient cases. Clair Claiborne Park's (2001) single-case study of her daughter's autism (N=1) reported 40 years of data at each stage of the challenges overcome and challenges not overcome (Patton, 2018).

Creswell (2020), who compares his book according to five qualitative approaches (narrative research, phenomeno-logical research, grounded theory research, ethnographic research and case study research), justifies purposive sampling according to the five qualitative approaches. He stated that working with several places or individuals in a qualitative research, as well as obtaining detailed and extensive information about each place or individual studied, is a general rule in deciding the sample size. Patton (2018), who states that there is no rule for sample size in qualitative research, states that sample size depends on what we want to know, the purpose of the research, what is at stake, what will be useful, what will be useful, what will be reliable, and what can be done with the available time and resources.

Lincoln and Guba (1985) suggest a saturation point for sample size. "In purposive sampling, the size of the sample is determined by informational assessments. If the goal is to maximize information, sampling is terminated when no new information comes from newly sampled units; therefore, satisfaction is the primary criterion" p. (202). Corbin and Strauss (2015), on the other hand, explain saturation as a time when new concepts do not emerge. However, saturation is more than just a matter of no new concepts. It also refers to the development of concepts in terms of their properties and involves showing their dimensional variations.

Patton (2018) cautions us once again that the size of the sample depends on what you want to learn, why you want to find it, how the findings will be used, and the resources (including time) you have for the study. Ultimately, sample size adequacy - like all aspects of research - is subject to expert review, consensual validity and judgment. What is important is that sampling principles and

decisions are fully described, explained and justified. This is so that users of the information and expert reviewers have the appropriate context for making sampling decisions.

Conclusion

Quantitative and qualitative research approaches are based on different philosophical and theoretical foundations. The difference in selecting the sample and deciding on the sample size stems from these different philosophical and theoretical foundations. The difference also stems from the difference in paradigms -ontology, epistemology, axiology and methodology- which are the sets of beliefs that guide the actions of researchers. In this context, quantitative research methods, which state that research should not be limited to singular events and phenomena but should be generalizable and thus aim to ensure external validity, prefer the probability sampling method, whose rules and standards are predetermined and strict.

In contrast, the rules of qualitative sampling are more flexible, but qualitative sampling should be purposive sampling. It is important to ensure that qualitative researchers make sampling decisions on a systematic basis and with rational justifications. A sample in qualitative research should pay attention to sampling units such as people, time or place (Holloway & Galvin, 2016). In purposeful sampling, it is essential to select cases that are rich in information to examine and that will illuminate the inquiry question being investigated according to their qualities (Patton, 2014).

While the evaluation statistics in probability sampling are mathematical, and it is clear how many people will represent the universe when interviewed at what percentage confidence interval, the same mathematical expressions cannot be used for purposive sampling. The logic of purposive sampling is quite different. The problem is that the utility and reliability of small purposive sampling is often decided on the basis of logic, purpose and proposed sample size. What should happen and what is right is that purposive sampling is evaluated according to the purpose and logic of the study in line with the answer to the question of whether the sampling strategy chosen supports the purpose of the study. As with all other aspects of qualitative research, the sampling issue should be evaluated within the context (Patton, 2018).

As a result, in-depth information from a small number of people can be very valuable, especially when situations are rich in information. Less depth from a larger number of people can be particularly useful for exploring a phenomenon and documenting diversity or understanding variations. Random probability sampling cannot achieve what in-depth, purposive sampling can and vice versa (Patton, 2018).

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CHAPTER 8
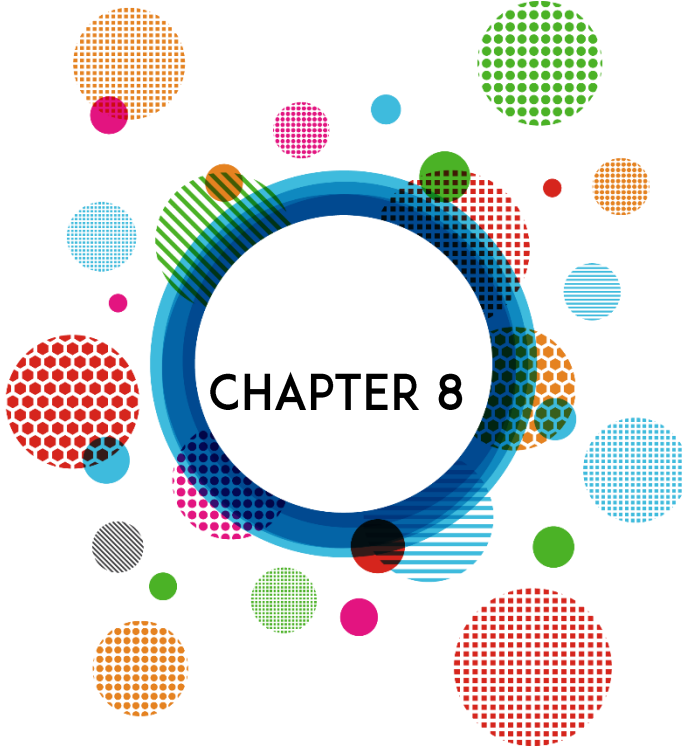
Combatting Addiction in Türkiye: A Multi-Stakeholder Network Analysis

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I.   Introduction

Addiction is a multifaceted public health issue that not only threatens individual well-being but also profoundly affects social structure, economic development, and public safety. Today, the widespread use of digital technologies has introduced new behavioral dynamics that increase the risk of addiction. Social media platforms, online games, and virtual reality applications, with their design psychology and data-driven business models, aim to optimize users' attention and resources. This is considered a result of an industrial approach centered on the concept of the "attention economy" (Digital, Culture, Media and Sport Committee, 2019). In this context, combating addiction requires a systematic approach not only at the individual level but also at societal and institutional levels.

In recent years, significant institutional and legal regulations have been implemented in Turkey in the fight against addiction. The Ministry of Health, the Ministry of National Education, universities, and non-governmental organizations have played active roles in this process. However, the increasing variety of addiction types (digital, substance-related, behavioral, etc.) necessitates the evolution of the intervention process into an interdisciplinary and multi-stakeholder structure (Presidency Directorate of Communications, 2025). Particularly in children and adolescents, digital addiction negatively affects psychomotor development (Saliaj & Mechili, 2023), while substance use has a complex relationship with socioeconomic status (WHO, 2024). This situation reveals that the struggle against addiction must extend beyond the health sector to include education, justice, and social services.

The literature emphasizes that weakened social bonds, adverse childhood experiences, and emotional deprivation lie at the root of addiction (Alexander, 2010; James, 2023). It is noted that a lack or breakdown of communication within the family can trigger addictive behaviors (Luisetto et al., 2019), while protective factors can be reinforced through stable family relationships and social support mechanisms (James & Bellantonio, 2024). Therefore, coordinated efforts among public institutions, universities, and non-governmental organizations are of critical importance in the fight against addiction.

The aim of this study is to systematically analyze the roles undertaken by actors involved in combating addiction in Turkey (ministries, universities, non-governmental organizations, and relevant boards). The research will examine the effectiveness of current policies, the dynamics of inter-institutional cooperation, and mechanisms of public participation through literature review and institutional

analysis methods. The study aims to contribute to the development of multi-stakeholder approaches in the fight against addiction.

II.Methodology

This study employs Social Network Analysis (SNA) to examine the relationships among public institutions, universities, non governmental organizations, and relevant boards engaged in addiction prevention efforts in Turkey. Social Network Analysis conceptualizes individuals or groups as "nodes" and the relationships among them as "edges." It focuses on the patterns formed by these nodes and edges and involves exploring those patterns—mathematically or visually—to assess their influence on the individuals and organizations that constitute the networks formed by intersecting ties (Scott, 2012) .

The data for this research were drawn from the report titled 21st Century Turkey's Mobilization Against Addictions, published by the Presidency's Directorate of Communications (2025). Within that report, the institutions and organizations actively involved in combating addiction were identified as nodes of the social network, while their collaborative, coordinative, or informational relationships were defined as edges .

Gephi—an open source software platform for network exploration and manipulation—was used to import, visualize, and analyze the data (Bastian, Heymann, & Jacomy, 2009). Initially, the dataset was structured in Microsoft Excel to create lists of nodes and edges. These lists were then imported into Gephi for visualization. During the visualization process, the ForceAtlas2 layout algorithm was applied to reveal the density of inter institutional ties and the frequency of interactions. For the subsequent analysis, core network metrics such as degree centrality, betweenness centrality, and modularity were calculated to deconstruct the network's structural properties (Gephi, n.d.) .

Leveraging Gephi's dynamic visualization tools, the positions of institutions within the network, their connection densities, and their central roles were examined in detail. This approach enabled the identification of which actors shape collaboration and coordination in the addiction prevention arena and elucidated the structural roles of the most central institutions.

The specific research questions guiding this analysis were as follows:

1.   How is the interaction network among institutions and organizations working in addiction prevention configured?

2.   According to social network analysis, which institutions occupy central

positions within the network?

3. To what degree is inter institutional collaboration and coordination strong?

4. How are network actors distributed by type (e.g., ministry, university, NGO)?

5. Which actors are peripheral or less visible in the addiction prevention network, and what potential roles might these actors play?

To ensure linguistic accuracy, the text of this study was reviewed by artificial intelligence for grammatical, spelling, punctuation, and stylistic correctness. The English translation of this methodology section was also supported by AI assistance.

III. Findings

In this study, the method of Social Network Analysis (SNA) was employed to examine the inter-institutional relations and structural dynamics among organizations operating in the field of addiction prevention in Turkey. The findings obtained from two main visual representations are presented systematically below.

3.1. Institutional Positioning and Role Distribution

The first visual (Figure 1) represents a network map arranged using the Force Atlas 2 algorithm. This algorithm positions the nodes (institutions) based on the intensity of their relationships and institutional proximity. Color coding was used to distinguish between types of institutions (ministries, universities, NGOs, councils, etc.).

Fig. 1 Relationship intensity and institutional proximity among organizations

A.   Central Public Institutions: The Ministry of Health, the Ministry of Family and Social Services, and the Ministry of Interior are located near the center of the network, assuming coordination and regulatory roles. Their high degree centrality indicates that these institutions are critical actors in policymaking and resource distribution.

B.   Non-Governmental Organizations (NGOs): The Green Crescent and its counseling centers occupy prominent positions in the network due to their high connectivity. This suggests that NGOs play an operational role in the field and act as bridges among stakeholders.

C.   Universities: Academic institutions such as Ege University, Ankara University, and Çukurova University are situated at the periphery of the network. Their relatively low number of connections implies that, while they contribute indirectly through knowledge production and education, their role in decision-making processes is limited.

3. 2. Relationship Intensity and Types of Collaboration

The second visual (Figure 2) emphasizes the intensity and nature of connections between institutions. Line thickness represents the frequency of interaction, while color and line style indicate the type of relationship (e.g., data sharing, joint training, coordination).
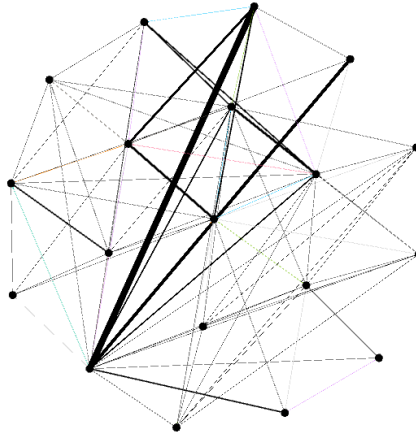
Fig. 2 Intensity and nature of inter-institutional relationships

A.   Strong Bilateral Relationships: The thick and continuous line between the Green Crescent and the Ministry of Health demonstrates a foundational coordination mechanism in policy implementation and service delivery.

B.   Multi-Stakeholder Coordination: The High Council for the Fight Against Addiction functions as a central node through multiple connections, reflecting the importance of non-hierarchical collaboration models in managing multi-actor problems.

C.   Public Awareness and Communication Networks: Relationships with institutions such as the Radio and Television Supreme Council (RTÜK), the Directorate of Communications, and CIMER indicate the presence of public awareness and communication strategies within the network.

Conclusions Related to the Research Questions

•   Structure of the Institutional Interaction Network: The analysis reveals that the addiction prevention network in Turkey is polycentric and multi-layered. Ministries provide vertical coordination, while NGOs and universities contribute through horizontal collaboration.

•   Institutions at the Core: The Ministry of Health, the Ministry of Family

and Social Services, and the Ministry of Interior are positioned at the core due to their high degree centrality. This underlines their policymaking and resource allocation roles.

• Assessment of Collaboration Levels: The intensity of connections indicates an asymmetric level of collaboration among institutions. For instance, the Green Crescent's multiple ties reflect active participation, whereas the sparse connections of universities suggest a more passive role.

• Distribution by Institution Type: Ministries cluster at the center, NGOs in intermediate layers, and universities on the periphery. This distribution aligns with the operational and strategic roles of each institution type.

• Potential of Peripheral Actors: Although universities and local institutions on the periphery have limited connections in the current network, they hold potential to contribute through academic research and applied projects. Integrating these actors into central mechanisms could enhance policy effectiveness.

Social Network Analysis reveals that Turkey's institutional architecture in the fight against addiction is hierarchical and multilayered. While the core-periphery dynamics highlight disparities in the distribution of resources and authority, the operational capacity of NGOs stands out. The findings suggest that strengthening peripheral actors and diversifying communication channels between the center and periphery are essential for sustainable policy development.

IV. Discussion

This study aims to contribute to the literature by systematically analyzing the roles and interaction dynamics of institutions involved in the fight against addiction in Türkiye through the method of social network analysis. The findings reveal that the struggle against addiction is carried out through a hierarchical and multi-layered institutional structure. In this section, the findings are interpreted in light of the literature, policy recommendations are developed, and the limitations of the study are discussed.

4.1. Core–Periphery Dynamics of Institutional Architecture

Analyses indicate that the addiction-fighting network exhibits a core–periphery structure. Central public institutions such as the Ministry of Health, Ministry of Family and Social Services, and Ministry of Interior play a critical role in policymaking and resource distribution due to their high-degree centrality (Figure 1). This reflects the state's centralized approach in managing addiction risks, such as "spiritual deprivation" and the breakdown of social bonds, as

emphasized by Alexander (2010). However, considering the literature's calls for multidisciplinary interventions (WHO, 2024; Paulus et al., 2018), the peripheral position of universities signals shortcomings in integrating academic knowledge into policy processes.

4.2. The Bridging Role of NGOs and Limited Local Impact

Non-governmental organizations (NGOs), particularly the Green Crescent and Green Crescent Counseling Centers, play an active role in operational activities and bridging between stakeholders with high connectivity within the network (Figure 2). This finding aligns with Flores's (2004) conceptualization of addiction as a "bonding disorder," highlighting the importance of community involvement in treatment processes. However, as noted by James (2023), local effectiveness must be enhanced in light of social risk factors such as poverty, social disorganization, and domestic violence. For instance, the underrepresentation of local NGOs and municipalities in the network reflects unequal capacities for combating addiction in urban and rural areas.

4.3. The Potential of Universities and the Academic–Policy Divide

The peripheral positioning of universities in the network shows that while they provide indirect contributions through knowledge production and education, they have limited influence in decision-making processes. This highlights the issue of academic–policy disconnection. For example, Király et al. (2014) emphasized distinctions between internet addiction and gaming disorder, and the inclusion of such findings in policy documents requires integration of universities into central mechanisms. Furthermore, Bukhori et al. (2019) examined the relationship between technology use and academic achievement; transforming such research into school-based programs may strengthen prevention efforts against addiction.

4.4. Deficiencies in Multi-Stakeholder Coordination

Multi-stakeholder bodies such as the High Council for Combating Addiction emphasize the importance of non-hierarchical cooperation models. However, the asymmetry in connectivity (e.g., sparse ties of universities) reflects inequalities in resource and authority distribution. Complex issues like digital addiction require coordinated efforts among institutions such as the Ministry of Health, Ministry of National Education, and the Radio and Television Supreme Council (RTÜK). Considering WHO's (2024) emphasis on the relationship between substance use and mental health, it is crucial to establish interdisciplinary teams and enhance data-sharing mechanisms.

4.5. Limitations and Recommendations for Future Studies

Although this study reveals the structure of inter-institutional relationships, it may not fully capture the dynamics due to the absence of qualitative data (e.g., interviews with institutional representatives) and detailed analyses of local actors. Additionally, time and resource constraints during data collection may have led to underrepresentation of certain institutions in the network. Future research could include actors such as local NGOs, municipalities, and the private sector to enable a more holistic mapping of the network. Moreover, analyzing sub-networks specific to types of addiction (digital, substance, behavioral) may contribute to tailoring policies accordingly.

5. Conclusion

In Türkiye, the fight against addiction is led by central institutions but pursued through a multi-stakeholder approach. The findings indicate the need to enhance the capacities of peripheral actors, strengthen academic–policy collaboration, and better account for local dynamics. Within this framework, it is recommended that hierarchical structures evolve toward flexibility, and proactive policies be developed to address addiction risks arising from digitalization.

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