Temel Eğitim Dergisi / Journal of Primary Education, 2024, 23, 6-21

İlkokul Öğrencilerinin Çevreleri ile Eleştirel Düşünme Becerileri Arasındaki İlişkinin İncelenmesi

Exploring The Relationships Between Primary School Students' Critical Thinking Habits and Interactions with Their Environment

https://doi.org/10.52105/temelegitim.23.1

Ömer Faruk ÖZBEY[1]

https://orcid.org/0000-0002-4788-083X

Rabia SARIKAYA [2]

https://orcid.org/0000-0001-9247-8973

Geliş Tarihi/Received: 23/10/2023 Kabul Tarihi/Accepted: 17/12/2023 Yayın Tarihi/Published: 15/07/2023

Özet:
Çalışmanın amacı ilkokul öğrencilerinin eleştirel düşünme düzeylerinin tespit edilmesi ve mevcut düzeylerinin nedenlerinin keşfedilmesidir. Araştırmada nitel yöntem desenlerinden biri olan durum çalışması tercih edilmiştir. Daha her sınıf seviyesinde toplamda 16 öğrenciyle görüşmeler yapılmıştır. Bu görüşmelerde veri toplama aracı olarak araştırmacı tarafından geliştirilen "Yarı Yapılandırılmış Eleştirel Düşünme Görüşme Formu" kullanılmıştır. Öğrencilerin gerçek yaşam durumlarına yönelik ifadeleri öğrenci, öğrenci-arkadaş, öğrenci-aile, öğrenci-öğretmen çerçevesinde içerik analizi tekniğiyle incelenmiştir. Gerçek yaşam durumlarında; birinci sınıf öğrencilerinin *deneyimlere güvenme* (6) kodunu, ikinci sınıf öğrencilerinin *manipülasyon* (6) kodunu, üçüncü manipülasyon (4) kodunu ve dördüncü sınıf öğrencilerinin *manipülasyon (6)* kodunu diğer kodlara göre daha sık kullandıkları görülmüştür. Bununla birlikte gerçek yaşam durumlarında öğrencilerin arkadaşlarının; *manipülasyon* (15) kodunu, öğrencilerin ailelerinin; *manipülasyon* (8) kodunu ve öğrencilerin öğretmenlerinin; *deneyimlere güvenme* (9) kodunu diğer kodlara göre daha sık kullandıkları bulunmuştur. Sonuç olarak öğrencilerin eleştirel düşünme davranışları ve çevreleriyle olan ilişkileri eleştirel düşünme durumlarıyla ilişkili olduğu düşünülmektedir. İlkokul öğrencilerinin eleştirel düşünme durumlarına yönelik öneriler sunulmuştur.

Anahtar Kelimeler: Eleştirel Düşünme, İlkokul Öğrencileri, Alışkanlıklar, Çevre, Mikro Sistem

Abstract:
The aim of this study is to explore the relationship between primary school students' critical thinking habits and their interactions with their environment. Case study, one of the qualitative method designs, was preferred in the research. Interviews were conducted with a sample of 16 students at each grade level. The researcher developed a "Semi-Structured Critical Thinking Interview Form" to collect data during the interviews. Students' expressions about real-life situations were analyzed using the content analysis technique within the framework of student, student-friend, student-family, and student-teacher. The study revealed that in real-life situations, first-year students used the code of Relying on experiences (6), second-year students used the code of manipulation (6), third-year students used the code of manipulation (4), and fourth-year students used the code of manipulation (6) more frequently than other codes. Conversely, students' friends frequently used the code of manipulation (15). Students' families used the code of manipulation (8) while students' teachers used the code of Relying on experiences (9) more often than other codes. The results suggest that students' critical thinking behaviors and their relationships with their environment are linked to their critical thinking status. Suggestions for improving primary school students' critical thinking abilities were presented.

Keywords: Critical Thinking, Primary School Students, Habits, Environment, Microsystem

Önerilen Atıf Bilgisi/To Cite This Article: Özbey, Ö. F., & Sarıkaya, R. (2024). İlkokul Öğrencilerinin Çevreleri ile Eleştirel Düşünme Becerileri Arasındaki İlişkinin İncelenmesi, *Temel Eğitim Dergisi*, *23*, 6-21.

[1] omerfarukozbeyy@gmail.com, Gazi Üniversitesi, Ankara, Türkiye
[2] erabia@gazi.edu.tr, Gazi Üniversitesi, Ankara, Türkiye

1. Introduction

Critical thinking is a cognitive process that involves analyzing, evaluating, and synthesizing information to form a reasoned judgment. It involves actively questioning assumptions and evidence, considering alternative perspectives, and applying reasoning to reach a well-supported conclusion. This definition is supported by leading scholars in the field of philosophy and education, including John Dewey, Richard Paul, and Linda Elder (Dewey, 1933; Paul & Elder, 2001; Elder & Paul, 2010).

Critical thinking is a crucial component of success in today's and future's society, particularly in the academic and professional domains (Partnership for 21st Century Skills, 2019; World Economic Forum, 2018). It is a skill that allows individuals to analyze and evaluate information, make sound judgments, and solve problems effectively (Robert Hugh Ennis, 2015; Lipman, 1988; Paul & Elder, 2014). Therefore, it is imperative to teach critical thinking to children at an early age, as it lays the foundation for their future success (Facione, 1990). Halpern, (1998) suggests that individuals who were taught critical thinking skills at a young age high likely to demonstrate higher levels of academic achievement, creativity, and problem-solving abilities later in their life than non-critical thinkers. This is why Ten Dam & Volman (2004) suggest that schools should promote critical thinking to raise ideal citizens for a modern, and democratic society.

However, critical thinking is not just about acquiring a set of skills. It also involves developing a set of dispositions that enable individuals to think critically consistently. Dispositions refer to the habits of mind that individuals have toward critical thinking. Some of these include open-mindedness, curiosity, fair-mindedness, and flexibility (Bailin vd., 1999; Robert Hugh Ennis, 1985; Facione, 1990; Paul & Elder, 2014). In other words, dispositions are the affective or emotional aspects of critical thinking. Therefore, we need to focus on developing critical thinking dispositions in children too. This is because dispositions are another important factor in developing critical thinking skills (Facione, 1990). Without developing the right dispositions, children may not be motivated to engage in critical thinking or apply critical thinking skills consistently. Moreover, dispositions are transferable across different contexts and disciplines (Halpern, 1993), making them essential for lifelong learning.

Research indicates that children are capable of reasoning and developing critical thinking dispositions from an early age (Ennis, 1971; Facione, 1990; Gelman & Markman, 1986). For instance, studies have shown that even young children can differentiate between reliable and unreliable sources of information (Koenig & Harris, 2005). Moreover, in a study conducted by Paul & Elder (2006), fourth-grade students were explicitly taught critical thinking skills and dispositions over the course of a school year. At the end of the year, the students showed significant gains in their critical thinking skills and dispositions.

The (microsystem) environment can be defined as the surrounding conditions that affect the growth and development of an individual (Bronfenbrenner, 1979). This environment includes family, teachers, peers. These environmental factors play a vital role in shaping a child's critical thinking dispositions because they have opportunity to the direct interact. For example, according to Liubov's (2013) study, children tend to learn manipulation from their families, and those who are exposed to frequent manipulation in the family environment tend to exhibit higher levels of manipulative behavior. On the other hand, Wan (2022) mentions in his study that students' interactions with their peers have a significant effect on their critical thinking levels. These studies suggest that the environment can shape a child's critical thinking dispositions either positively or negatively.

In light of the importance of critical thinking in children and the role of the environment in developing critical thinking dispositions, it is crucial to investigate the critical thinking habits of children in real-life situations. Understanding how children use critical thinking in daily life can inform educators and parents about the effectiveness of their current teaching practices and help identify areas for improvement. Furthermore, exploring how the environment (family, teacher, and peers) affects children's critical thinking habits can provide insights into how to create more conducive learning environments. Therefore, the present study aims to answer these research questions:

- What are the critical thinking habits that children use in real-life situations?
- How is their environment (teacher, peer, family) related to their critical thinking habits?

2. Method

Research Model

In this study, phenomenological research design was chosen from qualitative research approaches. Phenomenology is a suitable research design for exploring the lived experiences of individuals and the meanings they attach to those experiences (Creswell, 2016). Phenomenology, involves understanding the subjective experiences of participants and their interpretations of the world around them (Yıldırım & Şimşek, 2006). Therefore, it is an appropriate design for the question of this research, which aims to explore children's critical thinking habits in real-life situations and how their environment affects these habits.

Participant

The sampling method used to select participants for the study was the typical case sampling method. The purpose of this method was to obtain general information about students' critical thinking habits. According to Yıldırım & Şimşek (2006), the typical situation sampling method aims to describe an existing situation in general terms.

Using this method, it was aimed to select typical students who were representative of the study population. In order to achieve this, the participants of the study were selected from among the students who had previously participated in a study conducted by Özbey (2022) on critical thinking levels. Table 1 shows the average scores of the students in the Critical Thinking Test according to their grade levels.

Table-1: Critical Thinking Test Results

Grade	Purpose	*Problem*	Information	Concept	Assumption	Inference	Implication	Point of View	General
1st Grade	0.82	0.70	0.19	0.57	0.46	0.73	0.52	0.71	0.56
2nd Grade	0.97	0.76	0.27	0.77	0.62	0.75	0.67	0.84	0.67
3rd Grade	1.02	0.74	0.41	0.81	0.71	0.78	0.76	0.93	0.74
4th Grade	0.98	0.78	0.30	0.77	0.67	0.76	0.68	0.77	0.69

The average scores of the students on the Critical Thinking Test were analyzed by grade level, and students close to the average were selected for the interviews. In total, 16 students from primary school grades 1-4 were interviewed. To ensure the confidentiality and anonymity of the participants, the interviews were transferred to digital media by coding. The coding system used for this purpose was district, grade level, and gender. For instance, a student with S1E code was defined as a first-year level male student from Sincan district. This process helped to maintain the privacy of the participants and ensured that the study complied with ethical guidelines.

Data Collection Tools

In this study, the researchers developed a Semi-Structured Critical Thinking Interview Form (SSCTIF) to investigate the critical thinking habits of primary school students and their relationship with their environment. To prepare the interview questions, the researchers identified the groups that are in daily communication with students, namely friends, family, and teachers, based on the ecological systems theory (Bronfenbrenner, 1979).

The questions were designed to elicit information about the students' critical thinking habits in real-life situations. To ensure the suitability of the questions in terms of content and purpose, three experts were consulted and their feedback was incorporated. The adjustments made based on the feedback included reducing the number of questions to fit within one class hour, categorizing the questions into subsections, and rephrasing some questions to increase clarity (e.g., replacing "Do you ever feel misunderstood?" with "Have you ever felt wronged?"). Opinions were obtained from three different experts to ensure the suitability of the questions in terms of content and purpose. The final version of the YYEDGF was piloted in two different schools, and adjustments were made to the interview form based on the students' responses to create the final form.

Application

This pilot study and main study processes lasted for two academic years, 2021-2022 fall and spring semesters, with the approval of the “Gazi University Ethics Commission” and the permission of the “Ministry of National Education”. To conduct the pilot study of SSCTIF, a fourth-year student from the Etimesgut district was interviewed with a first-year student from the Sincan district. Fourth and first-year students were interviewed face-to-face and one-on-one in the assistant principal's room.

At the beginning of the application, the researchers introduced themselves and allowed time for the students to introduce themselves. They then reminded the students of the Critical Thinking Test that was applied in the previous study. Afterwards, the students were asked questions about their discussions in the friend environment, classroom environment, and family environment. Below are the questions that were changed as a result of the pilot application and the explanations of the additions and deletions made to these questions:

1. In the pilot interview, it was observed that the most important problem with the process was the way of expression. For instance, a first-year student asked, “Are there times when you can't get along?” and told a story about his friend hitting him. The fourth grader stated that there was no time when they could not get along. Therefore, the researchers tried to evoke situations in which there are two sides, and something is defended, such as "not being able to make a decision on an issue," "one side says this way and the other side says no way."

2. Another problem was that the subject of family was perceived sensitively by the students, who hesitated to share issues about their family. Therefore, the researchers provided the students with situations in which critical thinking could be used, such as "deciding on a topic," similar to the previous topic, and asked them to think about healthy discussion situations in which there are two sides.

Overall, the researchers made adjustments to the interview questions based on the pilot interviews, which enabled them to better understand and address the challenges that emerged during the initial implementation. The resulting SSCTIF interview form was then used in the main study of primary school students' critical thinking habits and their relationship with their environment.

The steps taken during the main study are outlined below in chronological order:

1. After identifying the districts, a list of schools and classes where the application would be implemented was prepared.

2. The researcher initiated the process by contacting the authorities at the designated schools and explaining the purpose, scope, and requirements of the study in detail.

3. In order to carry out the SSCTIF interviews, the authorities were requested to provide a suitable environment for face-to-face interviews with the students.

4. The teachers and selected students were informed that participation in the study was voluntary and that they could withdraw from it at any time.

5. Preparatory talks were held with the students, emphasizing that the interview was voluntary and that there were no right or wrong answers.

6. During the interviews, the researcher refrained from giving any direction and emphasized that the students' opinions on the subject were important. This approach encouraged the students to express their own thoughts rather than seeking a clear answer.

7. At certain intervals during the interview process, the researcher summarized the topics that the students had discussed and expressed them back to the students. The students were asked to approve the summary, and efforts were made to ensure consistency between the students' expressions and the researcher's understanding.

8. The researcher evaluated whether the topics brought up by the students were relevant to the study. If a topic was deemed irrelevant, guiding questions were asked to re-engage the student in the subject.

Analysis of Data

The process began by converting the research interviews into digital transcripts. Each file was then analyzed separately. Notes were made in the margins of the transcripts for statements that related to critical thinking habits, which formed the basis for further analysis. The files were then sorted into two folders: one containing the critical thinking habits of the students, and the other containing the critical thinking habits of the students' environment.

The evaluation process aimed to explore the critical thinking habits of the student, as well as those of his friends, family, and teachers in real-life situations. It began by identifying the critical thinking dispositions exhibited by the student in real-life situations. This was followed by an evaluation of the critical thinking habits used by his friends, family, and teacher towards the student being interviewed. This process was repeated for each group in the same way. Content analysis was used to identify the actions and discourses of the student and his environment in real-life situations. These definitions were then categorized using codes (Table 2), revealing the connections between the student and his environment in terms of critical thinking habits.

Table-2: Critical Thinking Habits Code List

Code	Explanation
Relying on experience	Do not rely on information from someone else's or your own experiences
Avoiding Argument	Avoiding or supporting avoidance of entering any conflict situation
Manipulation	Changing situations to suit their interests
Obey the majority	Unquestioningly accepting that the majority ends or resolves the debate
Disagreeing with the discussion	Do not think in any way that individuals should not argue
Obedience to authority	Unquestioning acceptance for a single party to end or resolve the dispute
Superficial thinking	Using general expressions when expressing a topic or problem
Ignoring the problem	Ignoring the situation causing the problem in conflict situations
Fair thinking	Considering the interests of all parties involved in making a decision on an issue
Unfair thinking	Seeking the interests of a single party in conflict situations
Reflection	Ability to articulate a topic or problem in detail
Acting authoritarian	Deciding on the solution of the problem as an authority in discussions
Being closed to different points of view	Continuing or ending the discussion without understanding other points of view
Having trouble reconciling	Continuing the dispute situation for a long time or leaving it unresolved
Consulting the specialist	Consulting an expert on a topic to resolve a disagreement
Compromise	Reaching a solution acceptable to all parties in the discussion

As presented in Table 2, the interview data were analyzed, and 16 different codes were identified. These codes were derived from the student's real-life situations described in the interviews. During the coding process, preliminary definitions were developed for each code. The aim of this coding process was to accurately define the expressions related to critical thinking in the student's case study. For instance, the code "relying on experience" was initially expressed as "using experience in evidence". At first, the code "using experience in evidence" was used to describe the student's reliance on knowledge gained through experience as evidence to support their arguments. However, it was recognized that this code was limited and did not encompass similar expressions. In such cases of disagreement, the evaluators engaged in discussions and arrived at a consensus. Subsequently, it was decided to combine the "witness in evidence" code and the "experience in evidence" code, which was another preliminary nomenclature. As a result, the code "relying on experiences" was formulated, which was deemed to better reflect the student's expressions. Table 3 illustrates an example of the final stage of content analysis.

Table-3: Critical Thinking Habit Content Analysis

	Statement	Code	Explanation
S1E	*A: So how do you decide who is right in such controversial matters?* *So, I'm trying to figure out who's telling the truth.* *A: How are you trying to understand? What's your method?* *I have to see it with my own eyes, and it has to be something that happens to me.*	Relying on experience	Relying on information from someone else's or your own experiences

G3K	*A: Do you think that you cannot convince the other party in situations where you are right?* *It is happening.* *A: What's happening?* *It happens a lot when fighting. Because they don't like me very much. To make (me) guilty for being angry.* *A: Do you think the result would have changed if anything else happened?* *No*	Manipulation	Individuals change situations to suit them
		Being closed to different points of view	Individuals continue and end the discussion without looking at it from other points of view.
G3E	*A: What happens when you can't convince the other side?* *It is happening.* *A: What's happening? Why do you think you couldn't convince?* *Asmin sometimes gets angry with me. He says I don't want to deal with you. For example, today I did not put a top (my outfit) on top of him (your outfit). Ada (his friend) put it, but she said (to me) that you are a liar. I didn't. I didn't put it but he told me you are a liar.* *A: Well, why do you think he wasn't convinced? Why couldn't you convince him?* *Because he doesn't see.* *A: He says I don't believe what I can't see with my own eyes. Yes* *A: Well, do you think so?* *Yes, I don't believe in what I can't see with my own eyes.*	Manipulation	Individuals change situations to suit them
		Relying on experience	Relying on information from someone else's or your own experiences

Table 3 provides examples of how critical thinking behaviors were coded and analyzed based on the data obtained from the interviews. In the first example, the response of student S1E to a truth-finding method question was examined. The student stated that they can determine if someone is right by seeing or experiencing a situation firsthand. The researcher coded this response as "relying on experiences."

In the second example, student G3K was asked when they have trouble persuading others. The student mentioned that they sometimes struggle to persuade others because the other party manipulates the truth. Additionally, the student claimed that there is no situation that would make them change their ideas. Two codes are related to these critical thinking behaviors: "manipulation," which refers to acting in one's own interests, and "being closed to different perspectives," which refers to not considering the perspective of the other party.

In the final example, student G3E described a situation with a family member related to persuasion. The student stated that their brother did not believe them during a misunderstanding because they did not witness the event. The researcher coded this behavior as "manipulation," since the sibling's behavior was not directly related to the topic at hand but rather a personal attack. Relying on experiences encountered is once again identified as an important factor for persuasion and is coded as such under S1E.

While conducting content analysis, it is common to come across expressions that may be relevant to multiple categories. For example, in the case of the student coded G3E, the data provided involves information about two different parties: the critical thinking habits of the family member and the student's own behavior. Therefore, while evaluating the statements related to the family member, they were coded as the critical thinking habit of the family member, and the parts related to the student's own critical thinking habits were evaluated separately and coded accordingly. In Table 2, codes and explanations for the critical thinking behaviors used by the students, their friends, families, and teachers in real-life situations are presented.

Content analysis was used as a qualitative technique in this study. To ensure credibility (internal validity), a trilogy of researchers conducted the study (Guion, Diehl, & McDonald, 2011), and the interviews with the students were also validated. Direct references were provided to the interview statements to ensure transferability (external validity). To check for consistency (internal reliability), the same researcher performed the coding process in two different time periods using the consensus formula according to the Miles and Huberman model (Miles & Huberman, 1994). The consistency between the codings was calculated using the formula, and it was found to be 86%. According to the Miles and

Huberman model, a study is considered consistent if there is at least 80% consistency between the codings. Thus, the study's consistency can be deemed sufficient. Disagreements that arose during coding were resolved by consulting with experts in the field of science, and a common decision was reached. To ensure external reliability, all stages have been described in detail.

3. Findings

The aim of the research is to investigate the critical thinking habits of primary school students and their relationship with their environment. In the findings section, the critical thinking habits of students were discussed first. Next, the study discovered the role of the environment in critical thinking habits by examining the relationships between students and their friends, teachers, and families. Table 4 presents the critical thinking habits of primary school students in real-life situations categorized by their grade levels.

Tablo-4: Critical Thinking Habits Exhibited by Primary School Students

1. Grade		2. Grade		3. Grade		4. Grade	
Code	f	Code	f	Code	f	Code	f
Relying on experience	6			Relying on experience	2	Relying on experience	4
Ignoring the problem	1	Ignoring the problem	2	Ignoring the problem	2	Ignoring the problem	3
Being closed to different points of view	1	Being closed to different points of view	1	Superficial thinking	2	Superficial thinking	1
Avoiding Argument	2	Disagreeing with the discussion	1			Avoiding Argument	2
Manipulation	2	Manipulation	6	Manipulation	4	Manipulation	6
		Obedience to authority	2			Obedience to authority	2
Obey the majority	1			Obey the majority	1	Obey the majority	1
				Fair thinking	1	Unfair thinking	3
		Acting authoritarian	3			Acting authoritarian	1
						Reflection	2

Table 4 reveals that students at all grade levels exhibit codes related to ignoring the problem and manipulation. In addition, many of the habits that emerge in student discussions or disagreements can be associated with poor critical thinking skills. However, it is worth noting that there are some examples of strong critical thinking skills exhibited by students, albeit in relatively small numbers.

Analysis of the codes used by students at different grade levels reveals that first-year students more frequently exhibit codes related to confidence in experiences (6), avoidance of discussion (2), and manipulation (2). This suggests that first-year students may be hesitant to engage in discussions, rely on their experiences in discussions, and attempt to manipulate their interlocutors.

Second-year students, on the other hand, exhibit codes related to manipulation (6), acting authoritatively (3), ignoring the problem (2), and obedience to authority (2) with greater frequency. This suggests that second-year students may resort to manipulation in discussions, act authoritatively in some subjects, obey authority in others, and tend to ignore problems that give rise to discussion.

Third-grade students exhibit codes related to superficial thinking (2), manipulation (4), ignoring the problem (2), and reliance on experiences (2). This suggests that third-grade students may exhibit shallow thinking, ignore problems that arise in discussions, attach great importance to their experiences, and resort to manipulation when discussing topics.

Fourth-grade students exhibit the most frequent codes related to manipulation (6), reliance on experiences (4), unfair thinking (3), ignoring the problem (3), avoidance of discussion (2), and reflection (2). This suggests that fourth-grade students engage in deep thinking about topics, manipulate others in discussions, reach unfair conclusions, trust their experiences, and ignore problems related to the topic under discussion.

The present study investigated the relationship between primary school students' critical thinking behaviors and their daily interactions with their environment. It is crucial to examine the contextual factors that shape students' critical thinking habits, as they are often exhibited in their daily

relationships with their surroundings. For this purpose, students' critical thinking habits in interaction with their environment were analyzed and the findings are presented in Figure 1.

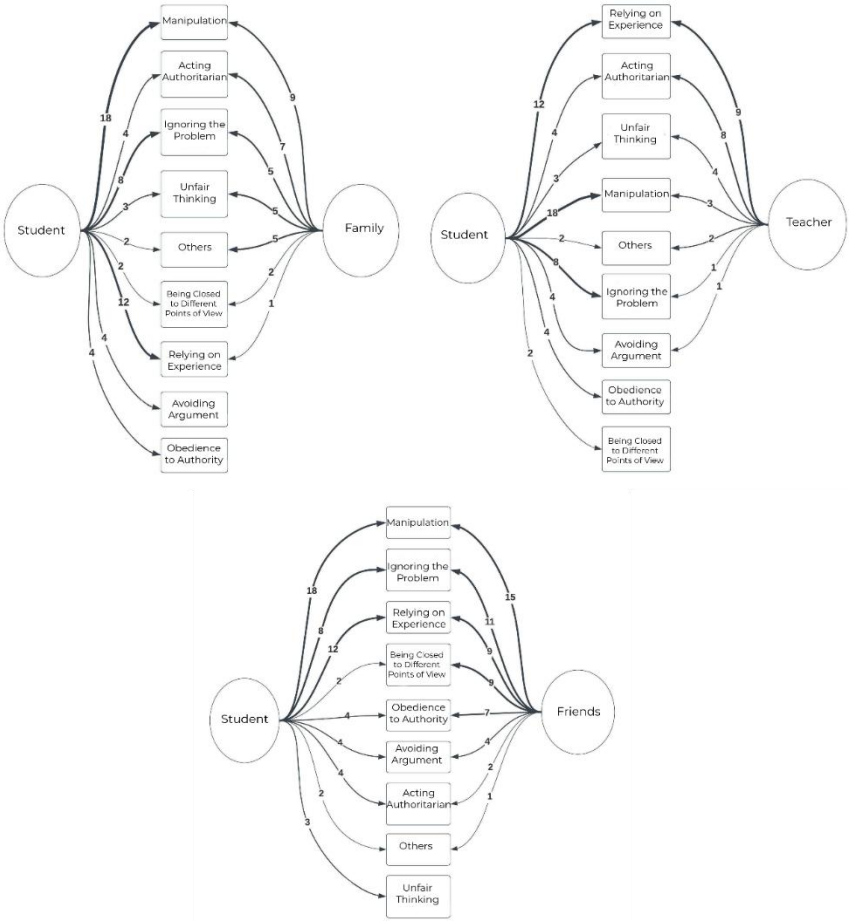

Figure-1. Students' Critical Thinking Habits Relations with Their Environment

Figure 1 displays the frequency of critical thinking habits observed in students' interactions with their friends, families, and teachers. The analysis revealed some patterns in the relationship between students' critical thinking habits and the people around them. These patterns are categorized as student-friend, student-family, and student-teacher and are discussed in detail below.

Student-friend relationship: The analysis of the interviews revealed that students initiate and end their critical thinking processes most often during their interactions with friends. However, the data showed that the quality of discussions in the student-friend relationship was weak and often led to negative results. During these discussions, students frequently displayed critical thinking behaviors associated with the *manipulation* (15), *ignoring the problem* (11), *being closed to different perspectives* (9), *obedience to authority* (7), and *avoiding discussion* (4) codes.

For instance, a student with the code G2E entered into a debate with his friends about the rule of taking a queen in chess. Despite thinking that his friends were wrong, he preferred to obey their views instead of continuing the discussion. This situation highlights how important the trust in experiences is for students as they often prioritize their own experiences or those of a trusted friend over other types of information in the discussion. It is worth noting that a friend's assertion of "*my sister came 1st in the chess tournament*" was evaluated as an expression aimed at manipulating others. This is because her sister's experience is irrelevant to the discussion at hand. When asked how to persuade his friend, the student suggested asking Zeynep, who went to a similar course, instead of providing evidence to support his argument.

It is believed that due to the closed-mindedness of individuals towards different perspectives in student-friend relationships, discussions often remain unresolved, leading students to either avoid discussion or resort to manipulation. The best example for this topic arose during an interview, where

two students from the same class provided the researcher with an example of disagreement. Therefore, the narratives are presented chronologically. The first incident, narrated by the first student (G4K), was about a disagreement that arose while playing a game. The student corrected his friend's mistake and was subsequently asked to leave the group. The second student (G4E) described an event where G4K attempted to play a game incorrectly and forced himself to enter the game, even though there was no room. As a result, the student ended up leaving without talking to G4K.

Upon examining both events, the researcher noted that while both students presented logical arguments, they also made statements aimed at manipulating. Both students believed they were extremely right, with G4K stating "*They like to lie like that*" and "*I'm telling the truth. They always go wrong*" and G4E referring to G4K as "*very stubborn*".

As seen in the examples, critical thinking behaviors used in discussion situations in student-friend relations can be described as weak. It has been observed that students have serious problems in starting, continuing, and ending any discussion. Another important issue is that students experience problems such as ignoring the problem, avoiding discussion, and being closed to different perspectives on controversial issues with their friends.

Student-teacher relationship: Based on the analysis of data obtained from interviews, it can be concluded that the interaction between students and teachers is generally initiated and terminated unilaterally by the teacher. When analyzing teachers' behaviors in these discussions in terms of critical thinking, it was found that codes related to *relying on experiences* (9), *authoritarian behavior* (8), *unfair thinking* (4), and *manipulation* (3) were used more frequently than other codes. It can be argued that teachers in the classroom mostly act as authorities who decide who is right or wrong in discussions. Additionally, teachers rely on experiences that are believed to affect the student-friend relationship in their decision-making processes. These experiences are often based on the discourse of third parties who have witnessed the students' discussions or are involved in the discussion.

For instance, when asked how disagreements were resolved in the classroom, a student with the G2E code stated, "*The teacher resolves it by putting the students involved in the disagreement on the board and having them discuss the issue."* When asked how the teacher decides who is right, the student replied, "*There is a person named Elif in our class who always tells the truth. If he witnessed the event, the teacher will ask him*." It is evident that in cases of disagreement, the teacher reaches a conclusion based on what those who witnessed the event reported and listening to the students' narration of the event. This situation was interpreted as the teacher's confidence in the decision-making process based on experience.

The analysis of the interviews indicates that teachers' authoritative roles and final decision-making may lead to unfair decisions in some instances. In general, students seek out teachers as a solution to conflicts in the classroom environment. Teachers, in turn, take action based on their evaluations and decisions. For example, a student with the G4K code stated, "*When there is a disagreement, teacher forbid them to getting offended*." When asked how the teacher decides who is right, the student replied, "*The teacher asks those who witnessed the event, the person next to us or something. The teacher warns the person who is wrong but also warn the person who is right too*." In some cases, it was also observed that the teacher overlooked the problem and warned the students even though they are right or wrong, which was interpreted as unfair thinking.

The unilateral behaviors exhibited by teachers in the examples above can be explained in terms of classroom management. The events described for the student-teacher relationship typically involve two students consulting the teacher for a solution, and it is often a viable solution for the teacher to resolve the disagreement based on the students' statements. However, from the perspective of critical thinking, it may reflect poorly on teachers if they do not guide students to solve their own problems, fail to think aloud while analyzing the arguments of both sides, fail to provide justifications for their conclusions, and deny students the right to object at the end of the decision-making process. These actions can result in students learning critical thinking incorrectly.

Student-Family Relationship: Upon analysis of the interviews, it is evident that critical thinking plays a crucial role in the student-family relationship. It was observed that *manipulation* (8), *authoritarian behavior* (7), *ignoring the problem* (5), *unfair thinking* (5), and *finding common ground* (5) were the most frequently used codes during family disputes or disagreements. The data suggests that family members often resort to manipulation techniques to justify their arguments, and those in positions of authority,

such as parents or siblings, tend to make decisions without question. For instance, a student from the A2E coded family reported an argument with her older sister over buying chips or other snacks. The student mentioned that no decisions were made other than what her sister said, which indicates a lack of critical thinking skills. Furthermore, the student used the manipulation technique by saying that there was "more" in her preferred snack, even though the amount was the same as her sister's choice. Another student with the S1K code shared his disagreement with his family's authoritarian behavior by refusing to visit his grandmother during holidays. Despite explaining his reasoning behind the decision, the family members did not consider his arguments, and the outcome remained unchanged. In such cases, family members tend to ignore the problem and make the final decision without considering the student's perspective. It is essential to foster critical thinking skills in children to ensure they learn to express their thoughts and opinions effectively and make informed decisions based on reasoning and evidence.

One critical thinking behavior that emerged during conflicts with family members was unfair decision-making. This was particularly evident in households with multiple siblings where the mother or father intervened as the authority figure, and both parties were warned. For instance, a student coded as G4K gave an example of a conflict in their family: "*My brother hit me, and I got angry. When my mother intervened, she scolded both of us. Then my brother accused me of shouting. My mother then warned me not to repeat such behavior*." Here, the mother's warning to both parties was considered unfair thinking since she punished the victim as well.

Another critical thinking behavior that was common in families was ignoring the problem. When asked whether elders in the family made judgments in cases of disagreement, a student coded as A2K replied, "*No, they never do. They want us to resolve the issue ourselves*." This approach led to ongoing conflicts with the student's older brother, which was evaluated as ignoring the problem. Another student, coded as G3E, described events that involved both unfair thinking and ignoring the problem. When asked if there were any disagreements in the family, the student mentioned an incident where their brother want silence, and student didn't comply. The disagreement continued until they made peace which is happened when they forgot the disagreement.

Regarding the approach of parents in such conflict situations, one student mentioned an incident where their mother bought more gifts for their sick brother than for them. The mother's solution to the problem was evaluated as meeting at a common point, as she promised to buy three eggs for each of them next time. However, the unequal treatment of children in gift-giving was considered unfair thinking.

In the last example given above, the study found that meeting at a common point, which is a strong critical thinking behavior practiced within families, was applied more frequently than other critical thinking behaviors. It can be said that meeting at a common point is one of the methods used by individuals such as parents who have the authority to resolve disagreements with students. For example, consider a situation where a student with the A2K code disagrees with their family about which city to move to. The student says, "*We are actually going to move... My father says, 'Let's go to Izmir.' I say, 'Let's go to Istanbul.' My mother also says, 'Let's go to Ordu*'." The researcher then asked if anything else was discussed for these options. The student responds, "*I think we should go here. Because this place is beautiful. There are many more places here*," and they could not reach a solution. The researcher asked, "*Are these the reasons you said about Istanbul?*" The student confirmed the situation, and said, "*Yes! I say this for Istanbul. My father also wants to go to Izmir because he loves the sea and the mountains. My mother also likes such a beautiful place like a forest. She wants to go to Ordu because there are natural places. For this reason, we say let's all three of us draw lots, and go to whichever place comes out. In other words, on the day we will go*," the student stated that other family members also expressed their arguments for their own choices. Here, the family's interaction with the student was evaluated as in-depth reflection, and it was concluded that the method they decided on as a result was meeting at a common point, because everyone agreed.

Considering the analysis of the interviews together with the statements on student-family relationships, it can be inferred that interactions between students and their families have an impact on their critical thinking behaviors. Quantitatively, it was reported by students that the majority of their movements towards critical thinking processes were derived from their families. The student with the G2K code, who regarded their family as a guide in problem-solving and paid close attention to their behavior in such situations, said, "*I always learned it from my mother. That's how my mom always solved problems. When we had a fight, I watched her carefully because she always solved problems with my sister. I listened carefully*." The statement "*I almost solve every problem when there is a problem*" suggests that the student has internalized the problem-solving methods they learned from their mother.

Similarly, authoritarian behaviors exhibited by families may cause students to obey individuals who hold a higher status. How conflict situations are handled, especially in families with more than one child, may set an example for the actions that students take in real-life situations. For example, it has been observed that the majority of conflicts that students have with their siblings in the family are resolved by appealing to the individual who is considered to have authority. It can also be speculated that this situation encourages students to resolve their conflicts in school life by seeking help from their teachers. Moreover, it was observed that students also demonstrate strong critical thinking behaviors in other discussions within the family.

The development of critical thinking skills in students can be strongly influenced by their environment. It is observed that the respect for authority that is instilled in the family environment continues in school life, where the teacher is often seen as the ultimate authority figure. Moreover, students also learn manipulation techniques among siblings in the family environment, which they may apply in their friendships. The behaviors and actions of teachers also have a significant impact on students' learning experiences, and students often rely on the knowledge and experience gained from their teachers. However, it is concerning that students often do not provide detailed feedback about how they approach conflicts in real-life situations and may instead use general expressions to gloss over problems. This tendency to ignore problems, particularly in the family environment, can have negative impacts on relationships with friends and may make it difficult for students to focus on resolving issues. Overall, it is evident that students' critical thinking skills are influenced by a combination of factors, including family, friends, and teacher relationships.

4. Conclusion and Discussion

Conclusion

This study aims to determine primary school students' critical thinking habits and explore their relationship with the environment. The study evaluates students' critical thinking habits in real-life situations within the student-friend, student-family, and student-teacher frameworks. The results show that students display various critical thinking habits and apply them differently in different environments. The most common behaviors observed include manipulation (18), Relying on experiences (12), ignoring the problem (8), obedience to authority (4), acting authoritarian (4), and avoiding arguments (4). The study also reveals connections between students' critical thinking habits and their environment in real-life situations.

The first relationship examined is the student-friend relationship. The study shows that mutual critical thinking behaviors in the student-friend relationship are weak. In real-life situations, students' friends often display critical thinking behaviors such as manipulation (15), ignoring the problem (11), Relying on experiences (9), being closed to different perspectives (9), obedience to authority (7), and avoiding discussion (4). These behaviors are thought to be related to students' critical thinking behaviors. It has been observed that students and their friends often do not consider opinions other than their own. In discussions with friends, students tend to either manipulate the conversation to impose their opinions or avoid the discussion altogether. Additionally, the study reveals that students and their friends mostly rely on experiences as a source of information.

The second relationship examined is the student-family relationship. When facing family disagreements, students tend to display critical thinking behaviors such as manipulation (9), behaving authoritatively (7), ignoring the problem (5), thinking unfairly (5), and finding common ground (5). Among these behaviors, manipulation mostly occurs between siblings. It has been observed that students and their siblings frequently resort to manipulation to convince each other and their parents of their point of view. Furthermore, the study shows that students' desire to persuade their parents is related to their parents' perceived authority. Parents' approaches to problems differ, with some ignoring the problem, others taking unfair decisions by displaying authoritarian behavior, and others trying to reach a common ground. For instance, a student trying to find a common ground in the family displayed similar behavior in resolving disagreements with friends.

The study also reveals the student-teacher relationship as another factor related to students' critical thinking. In cases of teacher disagreement, students tend to display critical thinking behaviors such as Relying on experiences (9), behaving authoritatively (8), unfair thinking (4), and manipulation (3). Due to their positions, teachers are constantly observed by their students, who learn from them and try

to apply their behaviors in their own lives. However, the study suggests that some of the teachers' critical thinking behaviors are learned by students through misunderstanding. Although the teachers listen to students' discourses while solving problems and make decisions accordingly, they do not always communicate this process or explain why they made the decision. Similarly, to the student-friend relationship, relying only on experiences as a source of information, students think of their teachers as an authority figure and often accept their decisions or actions without question.

Discussion

Considering the results, it has been observed that students exhibit weak critical thinking habits, such as being closed to different perspectives, manipulating, obeying, not seeking information, and ignoring the problem. These behaviors are more prevalent than other critical thinking behaviors and pave the way for other weak critical thinking habits.

Being closed to different perspectives is a critical thinking skill that students should develop from an early age. Bailin et al. (1999) and Facione (1990) suggest that students should be able to look at events from different perspectives. In the present study, it was found that students had difficulty empathizing with opposing viewpoints. Feshbach (1975) suggests that empathy and evaluation can be a difficult process for students. Eisenberg, Spinrad, & Sadovsky (2006) note that the ability to empathize and look from different perspectives increases since early childhood. Reid et al. (2013) state that students' ability to empathize depends on the current situation, and Paul & Elder (2014) suggest that students need to be aware of their self-centered tendencies and engage in neutral thinking exercises.

Manipulation is a behavior that distinguishes weak-sense critical thinkers from strong-sense critical thinkers. Weak critical thinkers act according to their own interests and try every way to get their views accepted. In the present study, it was observed that students resorted to various manipulation methods to justify their side. Liubov (2013) found that children first learn manipulation in the family environment, where manipulation is used more often. Jensen, Arnett, Feldman, & Cauffman (2004) state that students resort to various deceptions to avoid conflicts within the family. The code of manipulation is frequently used in the family environment in the present study, which supports this finding. Hart, Garcia, Pyle, & Goldberg (2022) suggest that there is a relationship between manipulation and empathy, and empathy can be abused by manipulation. Without proper guidance, students may develop negative habits, such as using manipulation to avoid situations in which they empathize with others Braginsky (1970) or using the emotions of others to get what they want (Hart et al., 2022).

Obedience is one of the habits that students often rely on in real-life situations. According to Paul & Elder (2014), individuals who lack critical thinking skills tend to expect others to tell them what to do. This negative habit can be reinforced when a teacher or parent is present, as they are often viewed as an authority figure. In a study by Choy & Cheah (2009) teachers reported that their students lacked critical thinking skills because they accepted information without questioning it. Laupa (1991) explained that primary school students often do not question what they are taught because they believe that adults with social status, such as teachers and parents, know everything and should be followed. Similarly, Yariv (2009) found in their study that 81% of students believe that teachers should be obeyed, and 70% believe that parents should be obeyed first. Additionally, studies by Gingo (2017) and Jensen et al. (2004) highlighted that students often engage in manipulative actions towards individuals they perceive as authorities, such as parents or teachers. Therefore, it can be said that there is a relationship between obedience and manipulation.

Ignoring the problem is another obstacle to critical thinking. Identifying the existing problem is crucial to starting the critical thinking process (Paul & Elder, 2014). However, in the present study, students tended to ignore the problem in cases of disagreement in their daily lives, which prevented a healthy critical thinking process from beginning. Similar actions have been observed in other studies as well. Johnson, Johnson, Dudley, & Acikgoz (1994) found that 60% of primary school students used conflict avoidance strategies directly or indirectly in their study. Ciuladiene & Kairiene (2017) stated in their study that students often prefer ignoring the problem when faced with authority or a decision made by the majority. Jensen et al. (2004) found that students often use behaviors that avoid conflict instead of experiencing it. Türnüklü (2007) reported that high school students rarely use avoidance strategies, while Türnüklü, Şahin, & Öztürk (2002) found that primary school students used avoidance strategies less frequently than other strategies. In the present study, Türnüklü (2007) and Türnüklü et al. (2002) categorized students' behavior of complaining to the teacher as a destructive strategy. However,

Johnson et al. (1994) noted that students' communication of the situation to the teacher transfers responsibility for the conflict and indirectly ignores the problem. Therefore, such behaviors are considered as ignoring the problem in the present study.

The critical thinking habits of primary school students are influenced by their interactions with their environment, including their relationships with friends, teachers, and family members. Terenzini, Springer, Pascarella, & Nora (1995) found that student critical thinking skills are shaped by their interactions with their environment, while Furrer & Skinner (2003) discovered that relationships with family, friends, and teachers contribute to student emotional development.

Research on the relationship between students and their families has produced mixed results. Basmaz & Kutlu (2021), Bulut, Ertem, & Sevil (2009), and Demir & Aybek (2014) found no significant relationship between student-family interaction and critical thinking dispositions. However, in this study found that the student-family relationship does affect the critical thinking habits of students. Unlike previous studies, which focused on the relationship between students and their parents, our study included siblings (if any) and analyzed the student-family relationship in real-life situations.

The findings of this study contradict some previous research, but they are consistent with other studies. For example, Yariv (2009) found that 70% of students believe that parents should be obeyed no matter what, which is related to questioning, one of the critical thinking dispositions. Similarly, Gingo (2017) discovered that the student-family relationship creates manipulative tendencies when authority and obedience are related, supporting the findings of our study. Jensen et al. (2004) also found that students from authoritarian families are more likely to resort to manipulation in times of conflict.

While it may appear that the family has a negative effect on critical thinking based on some studies, in this research found that students could exhibit strong critical thinking when appropriate family interaction was provided. Additionally, other studies have shown that the student-family relationship affects the student's tendency to empathize (Şirin vd., 2018; Taner Derman, 2013) and that relationships with family members significantly influence critical thinking (Wan, 2022).

Student-Teacher Relationship: The literature suggests that the relationship between students and teachers can impact critical thinking skills in different ways. For instance, Furrer & Skinner (2003) found that students' relationships with their teachers were more effective in promoting critical thinking than their relationships with friends and family. Similarly, Sethi & Scales (2020) discovered that improved relationships with teachers in secondary and higher education were associated with increased student success across various fields. However, Choy & Cheah (2009) interviews with teachers revealed that students are not effective critical thinkers. This was attributed to their tendency to receive information without questioning it, which may be reinforced by the authority-obedience dynamic between students and teachers. Indeed, Yariv's (2009) study found that students often regard their teachers as authorities and accept their ideas without question. Although teachers in Choy and Cheah's (2009) study claimed to understand and teach critical thinking in theory, the research indicated that they struggled to demonstrate critical thinking practices in the classroom. Similarly, Şengül & Üstündağ's (2009) study revealed that teachers were not providing activities that fostered critical thinking in the classroom. Polat (2014)'s study also found that teachers lacked a full comprehension of critical thinking and failed to take action to improve it in the classroom. Finally, Fajari, Sarwanto, & Chumdari (2021) reported that teachers did not teach critical thinking based on inquiry, and students struggled to grasp the concept. The present study suggests that the unclear and ambiguous critical thinking behaviors of teachers in real-life situations can lead to students learning incorrect information.

Student-Friend Relationship: Studies have shown that student-friend relationships also impact critical thinking skills. Terenzini et al. (1995) found that university students who described their peer relationships as competitive, disinterested, or alienated were more likely to develop critical thinking skills than those who reported having friendly, supportive, or a sense of belonging peer relationships. However, this finding contradicts the present study's results, which suggest that students in negative peer relationships tend to manipulate or ignore problems rather than engaging in critical thinking. On the other hand, Wan's (2022) study suggests that peer relationships have a significant effect on students' critical thinking levels. He argued that students in the classroom environment engage in more discussions with their peers and express their opinions more freely due to their age, which can lead to improved critical thinking skills over time. Terenzini et al.'s (1995) findings become more meaningful in light of Wan's (2022) study, as students who have the opportunity to express themselves and engage in conflicts

with their peers tend to improve their critical thinking skills. The present study's results support the notion that the student-friend relationship has the most significant impact on critical thinking habits. Encouraging students to start discussions and teaching them appropriate methods of self-expression can transform negative findings into positive ones. Further recommendations based on the study's results are discussed below.

Suggestions

The study presented several suggestions for practice and future research based on its findings:

- The study found that students struggle with entering different perspectives. Classroom environments that enable students to empathize with others can be created through creative drama activities. This will help them understand the perspectives and emotions of different people.
- It was observed that students frequently resort to manipulation. To counter this, students can be made aware of manipulation techniques and fraudulent thinking, and how to identify and resist them. This can be done in both classroom and non-classroom settings.
- The study found that students tend to ignore problems in real-life situations. To address this, students can be taught problem-solving and conflict resolution skills. Teachers can serve as role models by demonstrating critical thinking skills in problem-solving situations.
- The study observed that students tend to obey authority figures in classroom and family environments, which can hinder questioning and independent thinking. The importance of questioning through different life scenarios can be explained to students. Classroom discussions can be encouraged within certain limits, and students can be praised for presenting logical arguments.
- Teachers' expressions and behaviors can be misinterpreted by students, which can affect their relationship. To prevent this, teachers can explain their decisions and thought processes while resolving disagreements or deciding on a topic. This will help students better understand teacher behavior.
- The study found that student-family and student-teacher relations affect critical thinking. Therefore, studies on teaching and applying critical thinking for teachers can be organized, and critical thinking training can be offered for families.
- The study also found that students lack critical thinking dispositions such as entering different perspectives, searching for information and questioning. These skills can be incorporated into the curriculum across various disciplines.

Declarations

Acknowledgements: The first author acknowledges scholarships from the TUBITAK and BIDEB, which supported his research focus.

Authors' contributions: All authors contributed to this article in accordance with their distinct theoretical, pedagogical, and research expertise.

Competing interests: The authors declare that they have no competing interests.

Funding: This article and work was not funded by any funding agency or grant.

5. References

Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999). Conceptualizing critical thinking. *Journal of Curriculum Studies*, *31*(3), 285–302. https://doi.org/10.1080/002202799183133

Basmaz, I., & Kutlu, Ö. (2021). Eleştirel düşünme eğilimlerinin okuduğunu anlama, öğrenci, aile ve ev ortamı değişkenleri bağlamında incelenmesi. *Dijital Ölçme ve Değerlendirme Araştırmaları Dergisi*, *1*(2), 100–118. https://doi.org/10.29329/dmer.2021.409.2

Braginsky, D. D. (1970). Parent-child correlates of Machiavellianism and manipulative behavior. *Psychological Reports*, *27*(3), 927–932.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard university press.

Bulut, S., Ertem, G., & Sevil, Ü. (2009). Hemşirelik öğrencilerinin eleştirel düşünme düzeylerinin incelenmesi. *Dokuz Eylül Üniversitesi Hemşirelik Yüksekokulu Elektronik Dergisi*, *2*(2), 27–38.

Choy, S. C., & Cheah, P. K. (2009). Teacher perceptions of critical thinking among students and its influence on higher education. *International Journal of teaching and learning in Higher Education*, *20*(2), 198–206.

Ciuladiene, G., & Kairiene, B. (2017). The resolution of conflict between teacher and student: Students' narratives. *Journal of Teacher Education for Sustainability*, *19*(2), 107–120.

Creswell, J. W. (2016). *Nitel araştırma yöntemleri: Beş yaklaşıma göre nitel araştırma ve araştırma deseni*. Siyasal Kitabevi.

Demir, R., & Aybek, B. (2014). Lise Öğrencilerinin Eleştirel Düşünme Eğilimlerinin Çeşitli Değişkenler Açısından İncelenmesi. *Muğla Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *32*, 122–140. https://dergipark.org.tr/tr/pub/musbed/issue/23509/250486

Eisenberg, N., Spinrad, T., & Sadovsky, A. (2006). Empathy-related responding in children. Içinde *Handbook of moral development* (ss. 535–568). Psychology Press.

Ennis, Robert H. (1971). Conditional logic and primary school children: A developmental study. *Interchange*, *2*(2), 126–132.

Ennis, Robert Hugh. (1985). A Logical Basis for Measuring Critical Thinking Skills. *Educational Leadership*, *43*.

Ennis, Robert Hugh. (2015). Critical thinking: A streamlined conception. Içinde *The Palgrave handbook of critical thinking in higher education* (ss. 31–47). Springer.

Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Research findings and recommendations.* https://files.eric.ed.gov/fulltext/ED315423.pdf

Fajari, L. E. W., Sarwanto, & Chumdari. (2021). Critical thinking skills and their impacts on elementary school students. *Malaysian Journal of Learning and Instruction*, *18*(2), 161–187. https://doi.org/10.32890/MJLI2021.18.2.6

Feshbach, N. D. (1975). Empathy in children: Some theoretical and empirical considerations. *The counseling psychologist*, *5*(2), 25–30.

Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of educational psychology*, *95*(1), 148.

Gelman, S. A., & Markman, E. M. (1986). Categories and induction in young children. *Cognition*, 183–209.

Gingo, M. (2017). Children's reasoning about deception and defiance as ways of resisting parents' and teachers' directives. *Developmental psychology*, *53*(9), 1643.

Halpern, D. F. (1993). Assessing the effectiveness of critical-thinking instruction. *The journal of general education*, *42*(4), 238–254.

Halpern, D. F. (1998). Teaching critical thinking for transfer across domains: Disposition, skills, structure training, and metacognitive monitoring. *American psychologist*, *53*(4), 449.

Hart, S. R., Garcia, K. M., Pyle, S., & Goldberg, P. (2022). Trashy tricks rating scale: initial evidence for a youth self-report scale of manipulative behaviors. *SN Social Sciences*, *2*(5), 1–27.

Jensen, L. A., Arnett, J. J., Feldman, S., & Cauffman, E. (2004). The right to do wrong: Lying to parents among adolescents and emerging adults. *Journal of Youth and Adolescence*, *33*(2), 101–112. https://doi.org/10.1023/B:JOYO.0000013422.48100.5a

Johnson, D. W., Johnson, R., Dudley, B., & Acikgoz, K. (1994). Effects of conflict resolution training on elementary school students. *The Journal of Social Psychology*, *134*(6), 803–817. https://doi.org/10.1080/00224545.1994.9923015

Koenig, M. A., & Harris, P. L. (2005). Preschoolers mistrust ignorant and inaccurate speakers. *Child development*, *76*(6), 1261–1277.

Laupa, M. (1991). Children's reasoning about three authority attributes: Adult status, knowledge, and social position. *Developmental psychology*, *27*(2), 321.

Lipman, M. (1988). Critical thinking—What can it be? *Educational Leadership*, *46*(1), 38–43.

Liubov, R. (2013). Family influence on formation of children's manipulative attitudes. *International Journal of Cognitive Research in Science, Engineering and Education*, *1*(1), 14–18.

Partnership for 21st Century Skills. (2019). *Framework for 21st Century Learning*. http://static.battelleforkids.org/documents/p21/P21_Framework_Brief.pdf

Paul, R., & Elder, L. (2006). *Thinker's guide to the art of Socratic questioning*. Foundation Critical Thinking.

Paul, R., & Elder, L. (2014). *Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life* (Second Edi). Pearson.

Polat, S. (2014). *Eleştirel düşünme becerisi öğretiminin çok yönlü incelenmesi*. Necmettin Erbakan University (Turkey).

Reid, C., Davis, H., Horlin, C., Anderson, M., Baughman, N., & Campbell, C. (2013). The Kids' Empathic Development Scale (KEDS): A multi-dimensional measure of empathy in primary school-aged children. *British Journal of Developmental Psychology*, *31*(2), 231–256.

Şengül, C., & Üstündağ, T. (2009). Fizik öğretmenlerinin eleştirel düşünme eğilimi düzeyleri ve düzenledikleri etkinliklerde eleştirel düşünmenin yeri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *2009*(36), 237–248.

Sethi, J., & Scales, P. C. (2020). Developmental relationships and school success: How teachers, parents, and friends

affect educational outcomes and what actions students say matter most. *Contemporary Educational Psychology*, *63*, 101904.

Şirin, A., Özgen, G., Akça-Erol, F., & Akça-Koca, D. (2018). İlkokul 4. sınıf öğrencilerinin aile ilişkilerinin empatik eğilimlerine etkisi. *Marmara Üniversitesi Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi*, *48*(48), 59–72.

Taner Derman, M. (2013). Çocukların empati beceri düzeylerinin ailesel etmenlere göre belirlenmesi. *The Journal of Academic Social Science Studies*, *6*(1), 1365–1382.

Ten Dam, G., & Volman, M. (2004). Critical thinking as a citizenship competence: Teaching strategies. *Learning and Instruction*, *14*(4), 359–379. https://doi.org/10.1016/j.learninstruc.2004.01.005

Terenzini, P. T., Springer, L., Pascarella, E. T., & Nora, A. (1995). Influences affecting the development of students' critical thinking skills. *Research in higher education*, *36*(1), 23–39.

Türnüklü, A. (2007). Liselerde öğrenci çatışmaları, nedenleri, çözüm stratejileri ve taktikleri. *Kuram ve Uygulamada Eğitim Yönetimi*, *49*(49), 129–166.

Türnüklü, A., Şahin, İ., & Öztürk, N. (2002). İlköğretim okullarında, öğrenci, öğretmen, okul yöneticisi ve velilerin çatışma çözüm stratejileri. *Kuram ve Uygulamada Eğitim Yönetimi*, *32*(32), 574–594.

Wan, Z. H. (2022). What predicts students' critical thinking disposition? A comparison of the roles of classroom and family environments. *Learning Environments Research*, *25*(2), 565–580. https://doi.org/10.1007/s10984-021-09381-y

World Economic Forum. (2018). *The Future of Jobs Report 2018* . http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf

Yariv, E. (2009). Students' attitudes on the boundaries of teachers' authority. *School Psychology International*, *30*(1), 92–111.

Yıldırım, A., & Şimşek, H. (2006). *Sosyal bilimlerde nitel arastirma yöntemleri*. Seçkin Yayıncılık.