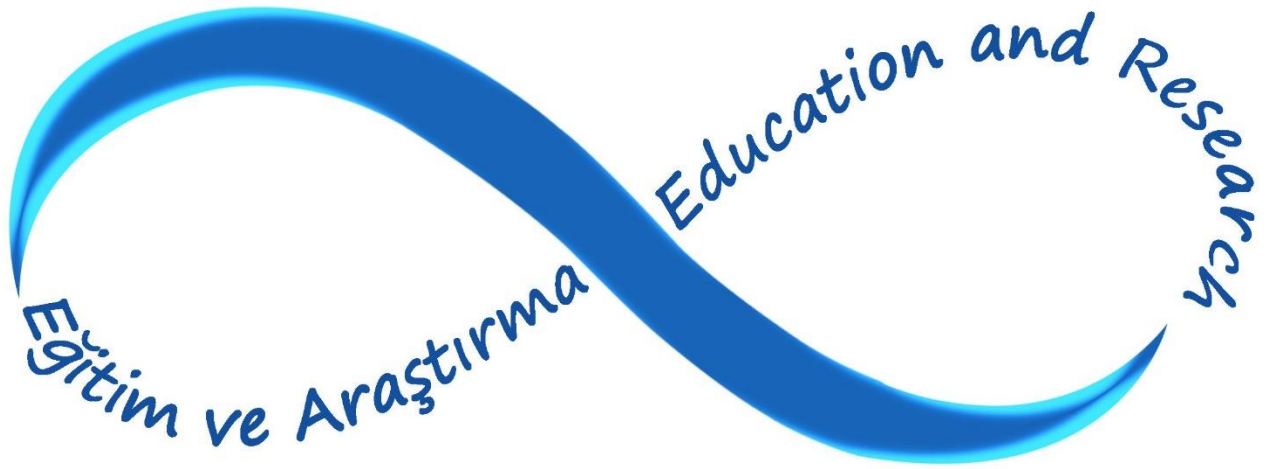




*Sınrsız Eđitim ve Arařtırma Dergisi*



*The Journal of Limitless Education and Research*

*Temmuz 2025  
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*July 2025  
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## The Journal of Limitless Education and Research

July 2025, Volume 10, Issue 2

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Temmuz 2025, Cilt 10, Sayı 2

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*Sınrsız Eğitim ve Araştırma Dergisi, Cilt 10, Sayı 2*

**Dear Readers,**

We are delighted to present you the July 2025 issue of the Journal of Limitless Education and Research.

The aim of our journal, the Limitless Education and Research Association (LERA), has continuously been published since 2016 is to contribute to the field of education and research with new scientific studies. To this end, theoretical and experimental original research, review articles, thesis summaries, and other scientific works are published for free and shared with readers at both nationwide and worldwide.

The Journal of Limitless Education and Research (J-LER) is published three times a year in both Turkish and English. As an international peer-reviewed journal, it is prepared with the scientific endeavors, contributions, and support of academics, scholars, researchers, educators, and teachers from different countries. Each issue including current and new studies is meticulously presented to the readers in the field, following thorough reviews.

Maintaining its academic and scientific quality for ten (10) years, the Journal of Limitless Education and Research (J-LER) is indexed in the EBSCO, Education Full Text (H.W. Wilson) Database Coverage List, which is recognized by the Council of Higher Education (ÜAK). It is also indexed in various national and international databases such as ASOS, DRJI, ESJI, OAJI, ROAD, SIS, SOBIAD, and Worldcat, and receives a significant number of citations. According to the SOBIAD impact factor, our journal ranks highly among scientific journals in our country. Efforts to have our journal indexed in more extensive national and international databases are ongoing.

In the July 2025 issue of our journal, eight (8) scientific research and review articles are featured. We would like to thank all the editors, authors, reviewers, and translators who contributed to the preparation and publication of this issue. With the hope that our journal will bring contributions to scientists, researchers, educators, teachers, and students in the field, we extend our best regards.

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**Değerli Okuyucular,**

Sizlere Dergimizin Temmuz 2025 sayısını sunmaktan büyük mutluluk duyuyoruz.

Sınırsız Eğitim ve Araştırma Derneği (SEAD) tarafından 2016 yılından bu yana 10 yıldır kesintisiz olarak yayınlanan Dergimizin amacı, yeni bilimsel çalışmalarla eğitim ve araştırma alanına katkı sağlamaktır. Bu amaçla kuramsal ve deneysel özgün araştırmalar, derleme makaleler, tez özetleri ve diğer bilimsel çalışmalar ücretsiz yayınlanmakta, ulusal ve uluslararası düzeydeki okuyucularla paylaşılmaktadır.

Sınırsız Eğitim ve Araştırma Dergisi (SEAD), yılda üç sayı olarak Türkçe ve İngilizce yayınlanmaktadır. Uluslararası hakemli dergi olarak farklı ülkelerdeki akademisyen, bilim insanı, araştırmacı, eğitimci ve öğretmen yazarların bilimsel çaba, katkı ve destekleriyle hazırlanmaktadır. Her sayıda titiz incelemeler sonucu güncel ve yeni çalışmalar alandaki okuyuculara sunulmaktadır.

Akademik ve bilimsel kalitesinden ödün vermeden on (10) yıldır yayın hayatını sürdüren Sınırsız Eğitim ve Araştırma Dergisi (SEAD), ÜAK tarafından alan indeksi olarak kabul edilen EBSCO, Education Full Text (H.W. Wilson) Database Covarage List'te taranmaktadır. Ayrıca ASOS, DRJI, ESJI, OAJI, ROAD, SIS, SOBİAD, Worldcat gibi ulusal ve uluslararası çeşitli indekslerde taranmakta ve çok sayıda atıf almaktadır. SOBİAD etki faktörüne göre Dergimiz, ülkemizdeki bilimsel dergiler içinde önemli bir sırada bulunmaktadır. Dergimizin daha geniş ulusal ve uluslararası indekslerde taranması için girişim ve çalışmalarımız devam etmektedir.

Dergimizin Temmuz 2025 sayısında sekiz (8) bilimsel araştırma ve derleme makaleye yer verilmiştir. Bu sayının hazırlanması ve yayınlanmasında emeği geçen bütün editör, yazar, hakem ve çevirmenlere teşekkür ediyoruz. Dergimizin alandaki bilim insanı, araştırmacı, eğitimci, öğretmen ve öğrencilere katkılar getirmesi dileğiyle, saygılar sunuyoruz. Dergimizin alandaki bilim insanı, araştırmacı, eğitimci, öğretmen ve öğrencilere katkılar getirmesi dileğiyle saygılar sunuyoruz.

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## Justice Disposition Scale for Primary School Students: Validity and Reliability Analysis

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**Abstract:** The aim of this study is to develop a valid and reliable measurement tool for assessing justice dispositions in 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup>-grade primary school students. The scale development process began with the creation of a theoretically grounded item pool, followed by content validity analysis through expert reviews. As a result of the Exploratory Factor Analysis (EFA), the scale revealed a unidimensional structure, accounting for 82.92% of the total variance. The Cronbach's alpha coefficient was calculated as .96, indicating a high level of internal consistency. Findings from the Confirmatory Factor Analysis (CFA) demonstrated excellent fit indices for GFI, AGFI, CFI, IFI, and RMR, while RMSEA and the  $\chi^2/df$  ratio indicated an acceptable level of model fit. The scale encompasses core indicators of justice disposition such as impartiality, honesty, rule adherence, and objectivity. Structured as a 4-point Likert-type scale comprising 7 items, it is designed to be clear, comprehensible, and cognitively appropriate for early childhood age groups. It is recommended that the scale be applied to diverse socio-cultural samples to conduct cross-cultural validity analyses.

**Keywords:** Justice, Justice disposition scale, Primary school.



## 1. Introduction

Justice, one of the oldest and most universal values in human history, plays a decisive role in both the regulation of individual life and the sustainability of the social structure. Derived from the Arabic root "‘adl," the term "justice" encompasses meanings such as "righteousness, equity, and fairness," and is used in various contexts in its infinitive, noun, and adjective forms (Çağrı, 1988; Topaloğlu, 1988). This etymological foundation enables us to perceive justice not merely as a legal principle, but also as a moral and structural principle of balance.

Traditionally defined as "everything being in its rightful place," justice refers to an order in which individuals, institutions, and roles are situated according to their functions. In this respect, justice is a context-sensitive, relational, and dynamic principle that cannot be fully explained by fixed rules. It resembles a balance tray with hollows for weights of different sizes, where each weight maintains equilibrium only when placed in a location suited to its own mass. In such a system, misplacing a weight not only disrupts the balance of its own position but also of the entire structure. Moreover, the equilibrium of each weight is determined by the weights around it. Thus, justice is not only an individual but also a social principle, characterized by reciprocal determinism. As emphasized by Türker (2021), for a sanction to be deemed just, society must be able to maintain its function as a "center of balance."

Historically, justice has held a central place in Turkish political and intellectual tradition. In the Orkhon Inscriptions, Bilge Khan’s statement— "I fed the hungry, clothed the naked, made a small nation great" —demonstrates that governance entails not only military or administrative power but also the responsibility to ensure social welfare and balance (Ergin, 1970; Kafesoğlu, 1992; Köymen, 1985). This understanding shows that the legitimacy of a ruler possessing "kut" (divine right) is directly tied to the provision of justice.

This historical trajectory, merging with Islamic thought, transformed justice into a concept bridging individual ethics and political responsibility. While Mahmud al-Kashgari defined justice as a prerequisite for social order in his *Dīwān Lughāt al-Turk*, Yusuf Has Hacib, in *Kutadgu Bilig*, described justice as "the harmony between thought and speech" (Arat, 1985). This conceptualization prescribes that the relationship between individual and society, ruler and citizen, should be structured around justice.

Medieval Turkish-Islamic philosophers also viewed justice not merely as a personal virtue but as an institutional necessity for maintaining social order. Al-Farabi emphasized the substantive rather than formal aspects of justice; Avicenna described it as "the essence of all

virtues,” placing it at the core of the moral system (Bayraklı, 1990; Turan, 2020). Al-Ghazali offered a framework integrating individual virtues with social structure in his conception of social justice (Orman, 2018). This intellectual foundation facilitated the emergence of institutions such as the *Dīwān al-Mazālim* during the Great Seljuk era, while roles like judges (*qadis*) and market inspectors (*hısbah*) directly reflected justice in public life (Şeker, 2017).

This rich intellectual legacy also influenced the early Ottoman intellectual sphere. Aşık Pasha, one of the founding figures of the Ottoman Empire, in his work *Garibnâme*, interpreted justice not merely as a governance virtue but as a balanced way of life guided by reason (Ovacık, 2022). His conceptualization of justice as a moral boundary to political authority through the “alp” figure laid the foundation for the concept of the “Circle of Justice” (*Daire-i Adalet*), which associates justice with the sustainability of sovereignty and social welfare (Gider, 2021; Ark, 2022).

In modern Turkey, justice is not only a constitutional norm but also central to educational policies aimed at fostering individual development. The 1973 National Education Basic Law cites fostering just thinking and behavior among students as a key objective, while the 2024 curriculum positions justice alongside values like respect and responsibility to support moral development (MEB, 2024).

### 1.1. Positioning the Value of Justice in the "Century of Türkiye" Education Model

The “Century of Türkiye” Education Model offers a holistic approach to education that emphasizes not only the cognitive and academic development of individuals but also the construction of character and awareness of social responsibility. The model is built around the framework of “Virtue–Value–Action,” aiming to ensure that values are internalized behaviorally. Within this framework, justice is identified as a core value, aiming to cultivate an objective, fair, and equitable attitude in individuals toward themselves and others (MEB, 2024). Here, justice is conceptualized not only as an ethical principle but also as an administrative and educational norm that supports responsibility and structural balance in social life.

To provide primary school students with tangible experiences of justice, the model integrates multiple contact points, particularly through disciplines such as Life Sciences and Social Studies (MEB, 2018a; MEB, 2018b). However, given the cognitive developmental characteristics of students at this age level, it is evident that directly measuring an abstract value like justice is challenging. Therefore, pedagogical practices are better served by focusing on

observable behavioral indicators that reflect the value of justice, rather than the abstract concept itself.

This perspective aligns with Piaget's theory of cognitive development. According to Piaget, children aged 7–11 are in the “concrete operational stage,” during which they make sense of concepts primarily through direct experience and observation (Piaget, 1972). Similarly, Kohlberg's theory of moral development shows that children at this age perceive justice largely in terms of conformity to authority, reward-punishment logic, and personal consequences (Kohlberg, 1981). These theoretical frameworks indicate that the value of justice should be conveyed through concrete, experiential, and behaviorally applicable content rather than abstract principles.

Thus, to track the development of the value of justice in an educational context and assess student progress, it is crucial to utilize objective, valid measurement tools that are sensitive to developmental levels. Such tools can provide not only instructional support but also deeper insights into how ethical values are internalized based on individual differences.

### **1.2. The Need for Developmentally Appropriate and Valid Scales at the Primary Level**

A review of the literature indicates that most measurement tools developed to assess the value of justice focus on middle and high school students, whereas developmentally appropriate and psychometrically sound scales for primary school students are limited. For example, the Justice Disposition Scale developed by Sarumsak (2011) was only applied to 4<sup>th</sup> and 5<sup>th</sup> graders, but lacks a confirmatory factor analysis to establish its validity. The scale developed by Karadavut et al. (2020), on the other hand, is based on teacher observations rather than student self-report, and therefore does not reflect the students' internal evaluations. The scale by Bilgin and Demir (2023) is limited to middle school students.

Recently, Özdemir and Yel (2024a) developed the Perception of Social Justice in Education Scale (ESA) to measure primary school students' perceptions of social justice in classroom settings. This scale comprises three subdimensions: “participatory justice,” “recognitional justice,” and “distributive justice.” Their Justice Value Internalization Scale (JVIS), developed in a separate study, targets high school students and measures the extent to which individuals internalize the value of justice (Özdemir & Yel, 2024b). Both studies clearly highlight the need to develop age- and developmentally appropriate scales.

For abstract values like justice to be meaningfully comprehended by primary school children, the scale items must be simplified in terms of language and content; the items should be short, clear, and relatable to children's everyday experiences. Otherwise, scale outcomes may deviate based on cognitive capacity rather than reflecting the true nature of the value being measured. Thus, during scale development, pedagogical suitability, developmental sensitivity, and contextual relevance must be concurrently considered.

### **1.3. Purpose of the Study**

The purpose of this study is to develop a valid and reliable measurement tool that enables the assessment of primary school students' attitudes and behaviors toward the value of justice, aligned with their developmental level. This scale is intended to facilitate the monitoring of the acquisition of the justice value from early ages and contribute to grounding values education practices in scientific methodology.

## **2. Method**

### **2.1. Research Design**

This study employed a scale development research design, conducted with the aim of creating a measurement tool that can be utilized within the context of values education. Within the scope of the study, items were generated to measure behavioral tendencies reflecting the value of justice among primary school students, and the psychometric properties of these items were examined. The research process was structured in accordance with the scale development principles proposed by DeVellis (2016) and Clark & Watson (1995), with particular attention to constructing validity, content validity, and sample independence.

Data collection was carried out within the framework of a cross-sectional survey model. This model, which allows for the objective analysis of individuals' attitudes and tendencies through data collected from a sample at a specific point in time, is deemed suitable for scale development studies (Christensen et al., 2015).

### **2.2. Participants and Sampling Strategy**

The sample consisted of 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup>-grade primary school students from various socio-economic backgrounds across Türkiye. To ensure the reliability and validity of the analyses conducted during the scale development process, the study was divided into two independent subsample groups: the first sample was used for Exploratory Factor Analysis (EFA), and the second for Confirmatory Factor Analysis (CFA).

The sample size for each group was maintained above the recommended minimum levels for factor analysis, which suggest using a sample that is at least 5 to 10 times the number of items (Tabachnick & Fidell, 2013).

Table 1

*Participant demographics for exploratory factor analysis*

Variable	Categories	F	%
Gender	Male	68	53.5
	Female	59	46.5
Grade Level	2 <sup>nd</sup> Grade	34	26.8
	3 <sup>rd</sup> Grade	46	36.2
	4 <sup>th</sup> Grade	47	37.0
Total		127	100.0

As shown in Table 1, the EFA sample included 127 students, of whom 68 (53.5%) were male and 59 (46.5%) were female. The distribution by grade level was as follows: 34 students (26.8%) from 2<sup>nd</sup> grade, 46 students (36.2%) from 3<sup>rd</sup> grade, and 47 students (37.0%) from 4<sup>th</sup> grade.

The second group was formed during the final phase of the pilot implementation and contributed data for the confirmatory factor analysis (CFA). Demographic information for this group is presented in Table 2.

Table 2

*Information about participants for confirmatory factor analysis*

Variable	Categories	F	%
Gender	Male	272	51.5
	Female	256	48.5
Grade Level	2 <sup>nd</sup> Grade	137	25.9
	3 <sup>rd</sup> Grade	192	36.4
	4 <sup>th</sup> Grade	199	37.7
Total		528	100.0

As seen in Table 2, the CFA sample consisted of 528 students, with 272 males (51.5%) and 256 females (48.5%). The grade-level breakdown was 137 students (25.9%) in 2<sup>nd</sup> grade, 192 students (36.4%) in 3<sup>rd</sup> grade, and 199 students (37.7%) in 4<sup>th</sup> grade.

### 2.3. Scale Development Process

The development process of the Justice Disposition Scale for primary school students consisted of the following stages:

- Generation of the item pool
- Expert review

- c. Pilot testing
- d. Data collection and analysis for Exploratory Factor Analysis (EFA)
- e. Data collection and analysis for Confirmatory Factor Analysis (CFA)
- f. Reliability analyses
- g. Reporting

**a) Generation of the Item Pool**

In the first stage of the scale development process, the objective was to formulate behaviorally based items that could validly and reliably represent justice dispositions among primary school students. For this purpose, a literature review was conducted, focusing on theoretical and empirical studies that examine the developmental foundations of justice perception in children and its relevance within the context of values education. The analysis guided the identification of core components of justice disposition, with attention to the following key concepts: equity, impartiality, honesty, sportsmanship, non-discrimination, sensitivity to justice, and objectivity.

Based on these concepts, a preliminary pool of 15 items was constructed, designed to align with common contexts in children's daily lives (e.g., school, play, classroom interactions). Each item was formulated to be short, concrete, and positively framed, appropriate for children's cognitive developmental level. Items with negative phrasing or complex, ambiguous expressions that could emotionally influence children were deliberately avoided.

The response format of the scale was structured as a 4-point Likert-type scale:

1 = Never, 2 = Sometimes, 3 = Often, 4 = Always.

This format provides a developmentally appropriate response range and allows for the measurement of frequency-based behavioral tendencies in students.

Table 3

*Pre-expert review – items, dimensions, and descriptions*

Item	Justice Dimension	Description
1. If I were a referee, I would treat both teams equally	Impartiality	Treating others equally, regardless of personal bias
2. I want everyone to be treated fairly	Sensitivity to Justice	Awareness of fairness and reaction to injustice
3. Even if I get angry when I lose, I do not disrupt the game	Sportsmanship	Adherence to rules and honest competition
4. Even if I do not like someone, I do not treat them unfairly	Equality & Impartiality	Acting justly despite personal feelings
5. When the teacher assigns a task, I do not show favoritism to my friends	Non-discrimination	Maintaining fairness despite close relationships
6. I follow the rules while playing and do not cheat	Honesty & Rule Adherence	Commitment to social norms and ethical values
7. I do not say someone did something wrong unless I see it with my own eyes	Objectivity	Basing decisions on facts, avoiding prejudice
8. I give turns to my friends during games.	Sense of Equality	Recognizing and respecting others' rights
9. I support someone who is treated unfairly	Justice Advocacy	Efforts to protect others' rights
10. I try to protect the rights of others	Social Responsibility	Contribution to maintaining social justice
11. Sometimes, rules can be flexible	Flexibility in Justice	Evaluating beyond rigid rules
12. If a mistake is made, intention matters	Intention-Based Justice	Focusing on intent rather than outcome
13. Sometimes, rules must be broken to be fair	Justice vs. Rule Conflict	Prioritizing justice over strict rule-following
14. It's not always possible to treat everyone the same	Realistic Justice	Recognizing limits of absolute equality
15. Sometimes injustice is done for a good reason	Utilitarian Justice	Evaluating justice in light of outcomes

The drafted item pool was submitted to field experts for content validation. Based on their feedback, linguistic and conceptual revisions were made to ensure appropriateness. The expert review process and subsequent revisions are detailed in the following section.

### **b) Expert Review Process**

Following the creation of the item pool, expert opinions were obtained to ensure content validity and assess appropriateness for the target age group. Two experts in Guidance and Psychological Counseling (GPC) reviewed the items based on children's cognitive, emotional, and social developmental characteristics. These experts evaluated the clarity of expressions, the potential for psychological discomfort, and the emotional impact.

In addition, three primary school teachers with 15 to 25 years of professional experience assessed the applicability of the items to classroom settings and the degree to which they resonated with students' daily experiences. The theoretical consistency and conceptual validity



of the scale were reviewed by two academicians specializing in educational sciences and educational measurement and evaluation.

Experts reviewed each item based on the criteria of clarity, content validity, and age appropriateness. As a result of these evaluations, five items were removed from the scale on the grounds that they were not suitable for the developmental level of the students. Particularly, the Guidance and Psychological Counseling (GPC) experts pointed out that some of the items involved abstract concepts that might be difficult for children to comprehend. Teachers stated that certain items did not align with the everyday experiences of children and thus could hinder the self-assessment process. The academic reviewers emphasized that some items were more related to moral reasoning or pragmatic ethical considerations rather than directly reflecting justice disposition.

Accordingly, the following items were excluded from the scale: "Sometimes rules can be flexible," "If a mistake is made, intention matters," "Sometimes rules must be broken to be fair," "It is not always possible to treat everyone equally," and "Sometimes injustice can be done for a good reason." These items were deemed to reflect abstract and developmentally complex concepts such as rule flexibility, attribution of intent, realism, or outcome-based thinking, rather than justice disposition. However, the justice dimensions represented by these five items were still indirectly reflected through the other remaining items in the scale. As a result, the scale was reduced to 10 items, thus achieving a more applicable structure while preserving content validity.

Following the expert review revisions, the scale was subjected to a pilot study, and students' feedback on item clarity was observed. Details of the pilot study are presented in the next section.

### **c) Pilot Testing**

The preliminary draft of the scale was administered to a total of 30 students in grades 2, 3, and 4 to conduct the pilot study. During the application process, potential difficulties experienced by students in understanding the items were observed, and some statements were simplified accordingly.

After the pilot, data collection for the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) was conducted using separate sample groups. The following steps were taken in the data collection process:

School administrations and classroom teachers were first informed, and their consent and support for the process were obtained. Short introductory sessions were held in classrooms before administration, during which the purpose of the scale was explained to students, and efforts were made to create a comfortable and motivating environment. Students were provided with detailed instructions on how to complete the scale. An example item was written on the board to demonstrate the answering process concretely. The scale was administered only after confirming that all students understood the instructions.

It was observed that 3<sup>rd</sup> and 4<sup>th</sup>-grade students were able to complete the scale comfortably with the help of examples, and no significant issues were encountered in these grades. However, differences in reading and comprehension levels among 2<sup>nd</sup>-grade students were anticipated. Observations by researchers revealed that students in high socioeconomic status classrooms could complete the scale independently, whereas reading comprehension varied in classrooms with medium and low socioeconomic status. Therefore, additional information about students' academic competence was obtained from teachers.

In classrooms where reading comprehension difficulties were identified, the application was conducted under the direct guidance of the researcher. The researcher explained how to complete the scale with examples, provided guidance to ensure understanding of the items without influencing the responses, and read each item aloud in class. Time was allotted for students to respond only after confirming their understanding of each item. This process ensured the collection of more accurate and consistent data, and the data collection was completed smoothly.

#### **2.4. Data Analysis Process**

In the first stage of the study, after the item pool was created and content validity was ensured through expert evaluations, the initial form of the scale was administered. Based on this data, Exploratory Factor Analysis (EFA) was conducted to determine the underlying factor structure of the scale. EFA is a data reduction technique used in cases where there is no prior model, and it identifies structures based on the interrelationships among items (Fabrigar et al., 1999).

The factor structure identified through EFA was then tested for model validity using Confirmatory Factor Analysis (CFA) with a different sample. CFA evaluates how well the observed data fit a proposed factor model and statistically confirms the construct validity of the

structure (Kline, 2011). Model fit was assessed using indices such as Chi-square/df, RMSEA, CFI, and TLI.

Additionally, the internal consistency of the scale was tested using Cronbach's alpha coefficient and item-total correlations. Thus, the construct validity and reliability of the scale were demonstrated through a multi-dimensional analysis approach. This two-stage analysis method enhances both the internal validity and the generalizability of the findings

### 3. Finding

This section presents the psychometric analysis results of the developed Justice Disposition Scale. The analyses were conducted in two stages—Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)—to examine the construct validity and reliability of the scale. The reliability level of the scale was also evaluated using item-total correlation coefficients and internal consistency coefficients (Cronbach's alpha).

#### 3.1. Exploratory Factor Analysis (EFA)

To identify the underlying factor structure of the scale and test the theoretical coherence of the items, Exploratory Factor Analysis (EFA) was conducted. Prior to the analysis, the suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity.

The KMO value assesses whether the sample is suitable for factor analysis. A value above .50 is considered the minimum acceptable threshold; values above .90 are considered "excellent," .80s "very good," .70s "good," .60s "average," and .50s "poor" (Kalaycı, 2010; Çokluk et al., 2012). In this study, the KMO coefficient was calculated as .910, indicating that the dataset was highly suitable for factor analysis.

Bartlett's Test of Sphericity evaluates whether there is sufficient correlation among variables for factor analysis. A statistically significant result ( $p < .05$ ) indicates a factorable structure among the variables (Tabachnick & Fidell, 2013). In this study, the Bartlett's test result was found to be statistically significant:  $\chi^2 (127) = 1060.504$ ,  $p < .001$ , confirming the suitability of the data for factor analysis.

The Principal Components Analysis (PCA) method was used for the factor analysis. As a result of the analysis, three items were removed from the scale due to significant loadings on multiple factors and violations of theoretical coherence (Büyüköztürk, 2011; Sipahi et al., 2008).

In the final version of the scale, 7 items remained with factor loadings ranging from .60 to .81. Descriptive statistics and factor loadings of these items are presented in Table 4.

Table 4

*Factor structure examined with the varimax rotation technique*

	Item	Factor Loadings
Item 3	If I were a referee, I would treat both teams equally.	.936
Item 4	I follow the rules while playing and do not cheat	.925
Item 6	I do not say someone did something wrong unless I see it with my own eyes.	.917
Item 7	When the teacher assigns a task, I do not show favoritism to my friends	.908
Item 1	I want everyone to be treated fairly	.908
Item 5	Even if I get angry when I lose, I do not disrupt the game	.905
Item 2	Even if I do not like someone, I do not treat them unfairly	.874
	Reliability:	.96
	Explained Variance:	82.92
	Eigenvalue:	5.805

As a result of the EFA, the factor loadings of the final items in the scale ranged between 0.874 and 0.936. These high factor loadings indicate that the items strongly represent the intended construct. The unidimensional structure of the scale explained 82.92% of the total variance, which significantly exceeds the commonly accepted range of 40–60% in social sciences (Field, 2009), suggesting a strong construct validity.

The internal consistency of the scale was evaluated using Cronbach's alpha reliability coefficient, which was calculated as  $\alpha = 0.96$ . This exceptionally high alpha coefficient demonstrates a high level of internal consistency, indicating that the items cohesively measure a single construct (DeVellis, 2016).

Factor determination was based on the eigenvalue criterion, with factors having an eigenvalue greater than 1 considered meaningful. The scree plot analysis revealed the eigenvalue at the point of steepest drop was 5.805, supporting a unidimensional factor structure (Green & Salkind, 2005).

### 3.2. Content Validity and Justification for Item Removal

During the analysis, three items were removed from the scale based on both statistical evaluation and qualitative content analyses by domain experts. Although these items had high factor loadings, they were conceptually aligned with psychosocial constructs related to, but distinct from, justice disposition:

*"I give turns to my friends during games"* was seen more as reflecting sharing and cooperation—social skills, not directly tied to the cognitive or principled core of justice.

*"I support someone who is treated unfairly"* was related more to prosocial and empathetic behavior, often driven by emotional connections rather than principled justice.

*"I try to protect the rights of others"* was interpreted within the framework of ethical sensitivity and social responsibility, but not directly reflective of the core elements of justice disposition.

Removing these items preserved the unidimensional structure and allowed the scale to focus solely on behaviors and attitudes directly representative of the justice value, thereby enhancing content validity and theoretical consistency.

### 3.3. Determination of Factor Count: Results of PA, MAP, Hull Test, and Scree Plot Analysis

To identify the scale's factor structure, four statistical techniques were used: Parallel Analysis (PA), Minimum Average Partial (MAP) Test, Hull Test, and Scree Plot Analysis. Given the subjective nature of scree plot interpretation, additional objective statistical methods were employed per reviewer recommendations.

Table 5

*Results of PA, MAP, Hull Test, and Scree Plot analysis*

Test Method	Suggested Number of Factors
Parallel Analysis (PA)	2 factors
Minimum Average Partial (MAP)	6 factors
Hull Test	1 factor (CFI = 0.974, TLI = 0.961)
Scree Plot	1 factor (only one eigenvalue > 1)

While PA suggested a two-factor model and MAP indicated a six-factor structure, the literature cautions that MAP tends to overestimate factor count in highly reliable scales, potentially fragmenting cohesive constructs unnecessarily (Velicer, 1976). Thus, the six-factor structure proposed by MAP lacked theoretical coherence and threatened the internal unity of the scale.

Conversely, Hull test results demonstrated strong model fit with CFI = 0.974 and TLI = 0.961, exceeding the accepted threshold of  $\geq .95$  (Hu & Bentler, 1999). The Scree Plot also supported a single-factor structure, reinforcing findings from both PA and Hull tests.

### 3.4. Evaluation of the Scale as a Unidimensional Construct

Given that the Justice Disposition Scale was designed for primary school students, it was imperative that the scale maintain a simple and comprehensible structure. Prior research has highlighted the difficulty young children have with understanding lengthy, multidimensional scales, which can compromise reliability and validity (Marsh et al., 2004).

From a theoretical perspective, justice disposition is a holistic construct encompassing cognitive (moral discernment), affective (value attribution), and behavioral (just conduct) tendencies. Therefore, modeling the scale as unidimensional aligns with the integrated nature of justice itself (Colquitt, 2001).

Data analyses supported this conceptual framework. The two-factor structure suggested by PA was found to contain high item content overlap and lacked meaningful theoretical subdimensions. Furthermore, only one eigenvalue exceeded 1 in the scree plot, and strong fit indices from the Hull test (CFI = 0.974, TLI = 0.961) confirmed that a unidimensional model was both statistically and psychometrically sound (Hu & Bentler, 1999).

Taken together, these findings justified the decision to retain a unidimensional structure for ease of application, developmental appropriateness, model fit, and internal consistency.

### 3.5. Item-Total Correlations and Internal Consistency Findings

Following construct validity analyses, item-total correlations and Cronbach's alpha were computed to evaluate each item's contribution and the overall reliability of the scale. These indicators provide insight into how well each item aligns with the overall construct.

Table 6

*Item-total correlation and reliability coefficients*

Item No	Item-Total Correlation
Item 1	0.873
Item 2	0.828
Item 3	0.912
Item 4	0.896
Item 5	0.869
Item 6	0.885
Item 7	0.873
Cronbach's Alpha ( $\alpha$ )	0.96

All item-total correlation coefficients exceeded 0.80, which is considered a high correlation in psychometric literature ( DeVellis, 2016). This indicates that each item contributes

meaningfully to the scale's structure. The highest correlation was observed for Item 3 (0.912), and the lowest for Item 2 (0.828), yet both values signify strong reliability.

### 3.6. Evaluation of the Reliability Coefficient

The internal consistency of the scale, as measured by Cronbach's alpha, was  $\alpha = 0.96$ . This value indicates an exceptionally high level of reliability. While values above .70 are considered acceptable, those exceeding .90 are regarded as reflecting "excellent internal consistency" (Tavşancıl, 2010).

Such a high reliability score suggests that the scale can consistently measure justice disposition across different times and similar samples. It also confirms that the items uniformly assess the intended construct and support the unidimensional scale structure.

### 3.7. Confirmatory Factor Analysis (CFA) Findings

To test the confirmatory construct validity of the developed scale, Confirmatory Factor Analysis (CFA) was conducted. CFA assesses the degree to which a theoretically grounded factor structure fits the observed data (Kline, 2011). Multiple fit indices were computed to evaluate model fit.

Although no universal consensus exists regarding CFA indices, it is common practice to report several indices together, representing different aspects of model fit (absolute, comparative, residual) for a comprehensive evaluation (Brown, 2006; McDonald & Ho, 2002). In this study, the following indices were reported: chi-square/degrees of freedom ( $\chi^2/df$ ), GFI, AGFI, IFI, CFI, RMR, and RMSEA. Detailed results of the fit indices are presented in Table 7, and the model structure is visualized in Figure 1.



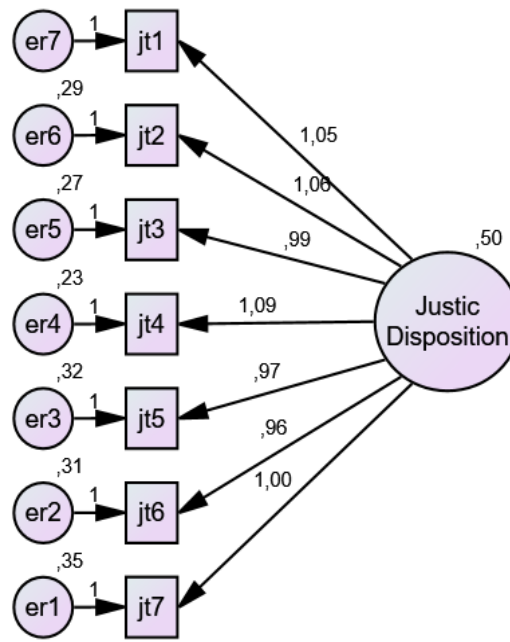


Figure 1. Model structure

### 3.8. Evaluation of Model Fit Indices

The model fit indices obtained from the Confirmatory Factor Analysis (CFA) were evaluated in comparison with the threshold values recommended in the literature:

Table 7

CFA model fit indices

Fit Index	Excellent Fit	Acceptable Fit	This Study	Evaluation
$\chi^2/df$	$\leq 2$	2 – 3	2.951	Acceptable Fit
GFI	$\geq 0.95$	0.90 – 0.95	0.978	Excellent Fit
AGFI	$\geq 0.90$	0.85 – 0.90	0.956	Excellent Fit
IFI	$\geq 0.95$	0.90 – 0.95	0.989	Excellent Fit
CFI	$\geq 0.97$	0.95 – 0.97	0.989	Excellent Fit
RMR	$< 0.05$	—	0.016	Excellent Fit
RMSEA	$\leq 0.05$	0.05 – 0.08	0.061	Acceptable Fit

The findings indicate that the model aligns well with the data. High GFI (.978) and AGFI (.956) values suggest strong congruence with the sample data. The IFI (.989) and CFI (.989) scores above .95 support comparative model fitness, and the low RMR (.016) indicates minimal residual errors. An RMSEA value of .061 confirms that the model falls within statistically acceptable error margins (Hu & Bentler, 1999).

Although the  $\chi^2/df$  ratio of 2.951 slightly exceeds the "excellent fit" threshold, values below 3 are generally considered acceptable (Şimşek, 2007; Kline, 2011).

The CFA results statistically support the unidimensional structure of the scale. All fit indices confirmed that the model is both valid and consistent, reinforcing the conclusion that the Justice Disposition Scale is a psychometrically robust tool for assessing justice tendencies in primary school students.

#### 4. Conclusion and Discussion

This study developed a psychometrically valid and reliable measurement tool for assessing justice dispositions among 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup>-grade primary school students. The scale development process began with a 15-item pool based on a literature review and theoretical framework. Expert evaluations were sought to ensure content validity, during which items were revised to suit the cognitive level of the target age group—abstract concepts were avoided and language was simplified and made concrete. Five items were excluded due to inadequate content validity or conceptual misalignment, and the remaining 10 items were pilot tested.

The pilot study was conducted with a heterogeneous sample of 30 students, and it was observed that 2<sup>nd</sup>-graders could also respond effectively when supported with appropriate explanations and examples—an important indicator of age-appropriate applicability.

Subsequently, Exploratory Factor Analysis (EFA) was performed on data from 127 students, revealing a unidimensional structure that explained 82.92% of the total variance, with a Cronbach's alpha reliability coefficient of .96. These findings indicate strong internal consistency and construct validity (Can, 2022; Field, 2009; Tabachnick & Fidell, 2013).

Confirmatory Factor Analysis (CFA) was conducted on an independent sample (n = 528). The CFA findings showed that the  $\chi^2/df$  and RMSEA values indicated acceptable model fit, while GFI, AGFI, IFI, CFI, and RMR indices reflected excellent model fit. These results support high alignment with the theoretical model and affirm the scale's validity (Byrne, 2010; Schermelleh-Engel et al., 2003; Kline, 2011).

In conclusion, the developed measurement tool is a unidimensional, 7-item, 4-point Likert-type scale designed to assess justice disposition in primary school students. The items reflect core justice components such as impartiality, non-discrimination, honesty, justice sensitivity, objectivity, sportsmanship, and adherence to rules. Total scores range from 7 to 28, where higher scores indicate stronger justice orientation.

### 5. Recommendations and Implementation Guidelines

The developed scale aims to assess primary school students' justice tendencies within a broad framework. However, justice is a multifaceted concept encompassing cognitive, affective, and behavioral dimensions. Therefore, it is recommended that quantitative findings be supplemented with qualitative data collection methods in educational contexts to enhance the quality of values education.

Since 2<sup>nd</sup>-grade students may vary in their reading and comprehension abilities, it is crucial to deliver instructions in a clear, simple, and age-appropriate manner. During administration, items should be explained with examples to facilitate understanding—but care must be taken not to influence students' responses. Teachers or researchers should assume a facilitative rather than directive role, especially with younger students.

The scale is suitable for both individual and group/classroom applications. Students should receive a brief orientation about the purpose of the scale before administration, and instructions should be communicated clearly. The testing environment should be free from distractions to ensure student focus.

Furthermore, implementing the scale across different socio-cultural and demographic groups will allow for the assessment of validity and reliability in diverse contexts. Such applications would increase the scale's general usability and make a meaningful contribution to the literature on values education measurement tools.

### CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest in this study.

### RESEARCH AND PUBLICATION ETHICS STATEMENT

The authors declare that research and publication ethics are followed in this study.

Ethics Committee Approval Information: Ethical approval for this study was obtained with the decision numbered 2024- 122, dated 09.05.2024, from the Scientific Research and Publication Ethics Committee of Uşak University Social and Human Sciences.

**AUTHOR LIABILITY STATEMENT**

The authors declare that the “Conceptual Framework, Method Design, Data Analysis and Software, Post Draft” part of this work was done by Assoc. Prof. Dr. Cüneyt AKAR, “Post Draft, Review and Editing, Visualization” part of this work was done by Dr. Beyhan CAN KAYA.

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**Justice Disposition Scale Instructions****Dear Student,**



In this study, we want to learn about your thoughts and behaviors related to justice. Below, you will find some statements. Please read each one carefully and choose the answer that best describes you.

Remember!

- ☒ There are no right or wrong answers.
- ☒ Answer based on your own thoughts and behaviors.
- ☒ You can choose the first answer that comes to your mind.

Response Options:

- 1- Never
- 2- Sometimes
- 3- Often
- 4- Always

Your answers are very valuable to us! Thank you.  If you don't understand a word or phrase, feel free to ask! 

Justice Disposition Scale	Never	Sometimes	Often	Always
1. If I were a referee, I would treat both teams equally.	( )	( )	( )	( )
2. I follow the rules while playing and do not cheat	( )	( )	( )	( )
3. I do not say someone did something wrong unless I see it with my own eyes.	( )	( )	( )	( )
4. When the teacher assigns a task, I do not show favoritism to my friends	( )	( )	( )	( )
5. I want everyone to be treated fairly	( )	( )	( )	( )
6. Even if I get angry when I lose, I do not disrupt the game	( )	( )	( )	( )
7. Even if I do not like someone, I do not treat them unfairly	( )	( )	( )	( )

**Adalet Eğilimi Ölçeği Yönergesi**

Sevgili öğrenci,

Bu çalışmada, adaletle ilgili düşüncelerini ve davranışlarını öğrenmek istiyoruz. Aşağıda bazı ifadeler bulacaksın. Lütfen her ifadeyi dikkatlice oku ve seni en iyi anlatan cevabı işaretle.

Unutma!

- ☒ Doğru ya da yanlış cevap yoktur.
- ☒ Kendi düşüncelerine ve davranışlarına göre cevap ver.
- ☒ İlk aklına gelen cevabı işaretleyebilirsin.

Cevap seçenekleri:

- 1- Hiçbir zaman
- 2- Bazen
- 3- Çoğu zaman
- 4- Her zaman

Cevapların bizim için çok değerli! Teşekkür ederiz. Anlayamadığın bir kelime veya ifade olursa sormaktan çekinme 😊

Adalet Eğilimi Ölçeği	Hiçbir Zaman	Bazen	Çoğu Zaman	Her Zaman
1- Hakem olsam, iki takıma da eşit davranırım	( )	( )	( )	( )
2- Oyun oynarken kurallara uyarım ve hile yapmam	( )	( )	( )	( )
3- Birinin yanlış bir şey yaptığını gözümle görmeden söylemem	( )	( )	( )	( )
4- Öğretmen görev verdiğinde arkadaşlarımı kayırmam	( )	( )	( )	( )
5- Herkese adil bir şekilde davranılmasını isterim	( )	( )	( )	( )
6- Kaybettiğimde sinirlensem bile oyunu bozmam	( )	( )	( )	( )
7- Bir kimseyi sevmesem de ona haksızlık yapmam				