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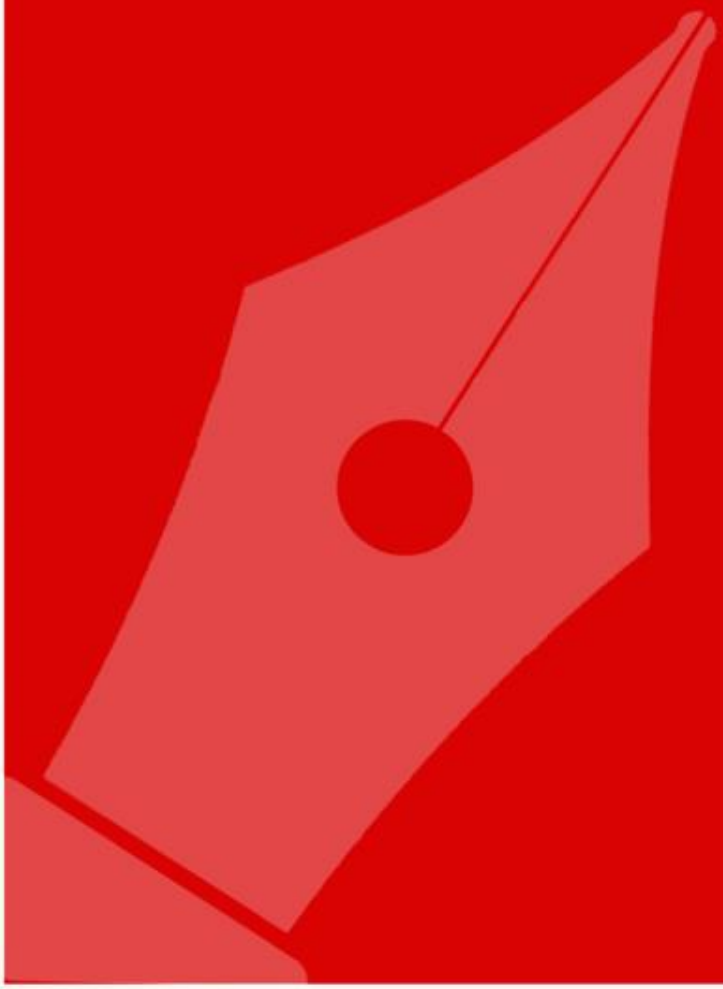

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Development of Portfolio Related Scales for Early Childhood Teachers: A Validity and Reliability Study

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Abstract

Portfolio is one of the common forms of pedagogical documentation around the world. However, there is no suitable instrument to measure teachers' portfolio practices in early childhood education. In this study, it was aimed to develop scales on portfolio practices and its possible predictors based upon extended Theory of Planned Behavior (TPB). Initially, content validity was ensured with expert opinions and cognitive interviews with early childhood teachers. After that pilot data were collected from 371 early childhood teachers and exploratory factor analysis (EFA) was conducted to explore the factor structure of the scales. Then, main study data were gathered from 605 early childhood teachers, and confirmatory factor analysis (CFA) was conducted to confirm the factor structure of the scales. Internal consistency coefficients were also calculated for the reliability analysis in both pilot study and main study data. As a result, findings confirmed the validity and reliability of the scales.

Keywords: Early Childhood Education, Portfolio Assessment, Scale Development, Theory of Planned Behavior

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IntroductIon

Developmentally appropriate assessment is one of the characteristics of high-quality early childhood programs (Couchenour & Chrisman, 2000). It supports learning by helping teachers to understand children in their classrooms (Becher et al., 2022). To this end, more specifically, authentic assessment is integrated into teaching and learning to improve instruction, teaching practices, and curriculum development (Litchfield & Dempsey, 2015). A portfolio is a well-accepted authentic assessment type (Gronlund & Engel, 2001). It is at the heart of assessment with young children because of its potential to recognize the uniqueness of each child (Kingore, 2008). However, to reach these offered benefits, there is no right way to create a portfolio system (Banta, 2003). This flexibility gives a crucial role to teachers in creating their own portfolio assessment system. Therefore, a teacher has an important role in achieving the intended purposes and benefits of portfolio assessment. Both their attitudinal and cognitive factors may impact their practices in the classroom (Yan & Cheng, 2015). Although there are some studies regarding teachers' attitudes and practices, most research focuses on one aspect of assessment (e.g., Brown, 2004; Brown et al., 2011). There are also limited number of scales on portfolio assessment, which were developed a while ago. For instance, Sonnier (1999) developed a scale to investigate teachers' portfolio practices. Harris and Curran (1998) investigated teachers' knowledge, attitude, and concerns about portfolio assessment by developing a scale. Similarly, portfolio related attitudes were examined with a scale in the dissertation of Butts (1997). Moreover, Tangdhanakanond and Archwamety (2019) developed a survey to investigate teachers' misconceptions in practicing portfolio assessment.

Having a broad focus, Theory of planned behavior (TPB) provides a comprehensive framework about people's tendency to perform or not to perform a certain behavior. It explains and predicts behaviors in a variety of domains and is supported by a number of research studies (Dunn et al., 2018; Lee et al., 2010; Patterson, 2000; Teo et al., 2016; Tsigilis, 2006; Yan, 2014; Yan & Cheng, 2015; Yan & Sin, 2014). However, it has not been integrated into research studies related to portfolio assessment in early childhood education. Therefore, there are not developed scales related to it in the literature. As a response to this gap, it was aimed to develop the portfolio related scales based upon the extended TPB and confirm the validity and reliability of them in this study.

Portfolio assessment in early childhood education

Portfolios is the widespread form of pedagogical documentation around the world. To define the concept, portfolio means a collection of student work over time and documentation of growth in specific curriculum areas (Fiore, 2012). It includes the "collection of child work and teacher data from informal and formal assessment to evaluate development and learning" (Wortham & Hardin, 2016, p. 241), and it is generally organized as a folder (Knauf, 2015). In portfolio content, systematic collection is important to ensure that a portfolio is developed purposefully regarding its content, organization, and assessment applications. Products must be representative of child work, not just the best works of children. It is also important to include both teacher-selected and child-selected products in portfolio. The teacher determines which products are necessary to report child achievement and learning. On the other hand, child-selected products also individualize the portfolio, reflect child interests, contribute to child ownership, motivate student learning (Kingore, 2008), and enable child self-assessment (Butler & McMunn, 2006). Thus, it contributes to improved self-assessment and self-efficacy of children (Authors, 2016). It can also be used as a communication tool between children, families, and educators (Kingore, 2008). Importantly, it provides a visual representation of child development over time with respect to developmental domains and content standards (Piker & Jewkes, 2013). As a result, it helps teachers to understand student learning and contribute to quality teaching (Kim & Yazdian, 2014). Thus, it enables improved educational practice (Pekis & Gourgiotou, 2017).

Theoretical Framework

There are different affective factors to consider upon teachers' practices. In this study, it was aimed to develop scales on portfolio practices and its possible predictors based on extended TPB. It has been integrated into a variety of research studies in different settings (e.g., Armitage & Conner,

2001; MacFarlane & Woolfson, 2013; Yan & Cheng, 2015; Yan & Sin, 2014). To explain, according to this theory, people are also more likely to engage in the intended behavior if there are strong intentions (Ajzen, 1996). Goal intention provides commitment to achieve it and has a primary role in understanding the motivated behavior (Gollwitzer & Bargh, 1996). Another identified predictor of behavior is also perceived behavioral control. It was proposed that "From a theoretical perspective, self-efficacy and perceived behavioral control are virtually identical" (Fishbein & Ajzen, 2010, p.161). Both refers to perception of capability for performing a specific behavior or reaching a certain goal (Fishbein & Ajzen, 2010). However, since perceived behavioral control might be influenced by external factors, it is less predictive than self-efficacy (Yan & Cheng, 2015). As a result, it was integrated into models together with TPB variables in different research studies (e.g., Patterson, 2000; Yan, 2014; Yan & Cheng, 2015). For instance, it was confirmed that teachers are more likely to practice assessment if they feel confident (Yan & Cheng, 2015), but they are not willing to use assessment methods if they have low self-efficacy (Guo et al., 2014).

Furthermore, TPB highlighted different variables as determinants of the intention including attitudes and subjective norms (Ajzen, 2005). "Attitude is the individual's positive or negative evaluation of performing the particular behavior of interest" (Ajzen, 2005, p. 188). It was defined as a predictor of teachers' intention in practicing formative assessment (Yan & Cheng, 2015). According to TPB, attitude towards a behavior is also determined by behavioral belief, which is related to the consequences of the behavior, and behavior is linked to certain outcomes in each behavioral belief. Another one, subjective norm, is also the perception of the social pressure related to performing or not performing the behavior (Ajzen, 2002; 2005).

In addition to the theory constructs, several authors suggested that additional variables are necessary for TPB. These variables can increase the variance accounted for in a person's intentions and behavior (e.g., Conner & Armitage, 1998). For instance, personal norm is strongly and positively related to behavioral intentions (Doran & Larsen, 2016). A personal norm is an individual's moral obligation or responsibility to perform or not to perform a behavior (Ajzen, 1991). Similarly, it was agreed that barrier perception might contribute to predictability of intention (Bozioneles & Bennett, 1999). Despite the reported advantages, there are several challenges of the portfolio assessment process to reach offered benefits, and learning about barrier perceptions might provide insight into challenging issues to better support teachers.

Overall, all these constructs might be a considerable factor on portfolio practices. However, TPB has not been utilized as a theoretical framework to investigate portfolio assessment, particularly in early childhood education. There are also fewer research studies on portfolio assessment in the literature (e.g., Authors, 2016; Appl et al., 2014; Knauf, 2017a, 2017b; Krnjaja & Pavlović-Breneselović, 2016; Pickens, 2018), which focus on specific portfolio types or teachers' perspectives on portfolio assessment. As a response to the gap, the scales were aimed to be developed as a part of this study based on an extensive literature review on the theory and portfolio assessment in early childhood education.

METHODOLOGY

Purpose

In the present study, it was aimed to develop scales based upon the extended TPB related to portfolio assessment. This theory has constituted the baseline for other assessment-focused studies within the literature (e.g., Schaaf et al., 2008; Yan & Cheng, 2015). However, it has not been utilized as a theoretical framework for investigating portfolio assessment particularly in early childhood education and therefore, there are no existing scales for this purpose. As a response to this gap, it was aimed to develop the following scales in the present research study related to portfolio assessment in early childhood education: practice, norms, behavioral beliefs, attitude, self-efficacy beliefs, barrier perceptions, and intentions.

Participants

Data were collected from a total of 621 ECE teachers in different districts of Ankara, Türkiye. After data cleaning, a total of 605 usable responses were included in the main data analysis. 99% (f = 601) of teachers were female, and 83% (f = 503) had graduated from an ECE department. The participating teachers worked in two types of public schools: a preschool classroom within an elementary school (48%, f = 289) or an independent preschool (52%, f = 316). There was an assistant teacher within 41% (f = 245) of these classrooms. The total of teaching experience was approximately 14 years (SD = 7.1), and teachers had an average of 20 children (SD = 3.9) per classroom. The participating teachers' ages also ranged from 21 to 60-years-old. Furthermore, seventy-two percent (n = 438) reported using portfolio assessment, while 28% (n = 167) of the teachers reported that they did not (This information was obtained with the question of "Do you use portfolio assessment in your classroom?").

Scale development process

Instrumentation development steps presented by McCoach et al. (2013) and Netemeyer et al. (2003) were considered. Accordingly, the steps taken were specifying scale purpose, reviewing existing instruments, developing operational definitions, selecting a scaling technique, matching items with dimensions, expert review of items, developing directions and conducting a pilot study, and analyzing pilot data. As a first step, operational definitions were created based on a detailed literature review regarding both portfolio assessment and TPB. Then, the items were developed by adopting the principles for TPB scale construction suggested by Ajzen (2002). To this end, the researcher created an item pool for each scale based on previous literature on teachers' beliefs and practices related to assessment (e.g., Brown et al., 2011; Yan, 2014), and items were matched to the appropriate dimension.

After that, for content and face validity, the item pools were examined by seven expert faculty members: three in early childhood education, two from measurement and evaluation, and two science educators. The experts evaluated the suitableness of each item according to a specified construct as well as evaluated each item in terms of clarity. After making the experts' suggested revisions, cognitive interviews using the think-aloud protocol were conducted regarding the prepared scales with two early childhood teachers from public preschools in Ankara. Among the teachers interviewed through the think-aloud protocol, one was utilizing portfolios within their classroom, while the other was not. Through this process, the participants were requested to think aloud while answering protocol questions as well as stating everything that they were thinking (Collins, 2003; Drennan, 2003). Following these cognitive interviews, minor changes were made to a few items to improve clarity (Author, 2022).

Pilot Study

Pilot testing of an instrument provides information regarding clarity of instructions and questions. To this end, all of the scales were piloted, and the pilot study was conducted in a similar context to the later study used in Ankara. After receiving ethical permission, the prepared scales were administered to volunteer teachers, and 371 usable responses were obtained and analyzed in the pilot study. According to Hair et al. (2010), a sample size of 10 cases per item is considered acceptable, and this was satisfied for each scale in the pilot study. In total, 97% (f = 360) teachers were female, and 80% (f = 298) had graduated from an ECE department. Additionally, all participating teachers were working in public preschools. Also, 13% (f = 47) of teachers had an assistant within their classroom. The average amount of teaching experience was approximately 14 years (SD = 8.33), and teachers had 17 children (SD = 6.86) on average in their classroom. Over three-quarters of participants (77%, f = 286) had previously taken an assessment course, while 12% (f = 45) had received in-service training regarding portfolios. Importantly, a majority of participating teachers (77%, f = 285) were using portfolios, whereas 23% (f = 86) were not.

The pilot study data collected were subjected to exploratory factor analysis (EFA) for each of the developed/adapted scales to explore the factor structure of the scales, and Cronbach's alpha was also calculated for each one to report reliability. The number of factors was decided based on the eigenvalue greater-than-one rule and the scree plot (Netemeyer et al., 2003). The literature supports that factor loading of .30 has practical significance for a sample size of 350 or greater (Hair et al., 2010). All factor loadings above .3 were reported in the present study in line with the suggestions. The SPSS 25 program was used to conduct these analyses.

Data collection and analysis

After obtaining ethical permission from the host university human subjects ethics committee and the Turkish Ministry of National Education (MoNE), the data collection tools were administered in preschools for a period of approximately three months. The research data confidentiality was ensured by collecting questionnaires anonymously. Scales were completed by all teachers who were practicing and not practicing portfolio assessment. However, since portfolio practice and portfolio norms scale include items regarding implementation, those scales were only completed by the teachers who were practicing portfolio assessment.

After collecting the primary study data, confirmatory factor analysis (CFA) and Cronbach's alpha values were generated for each scale to confirm these factor structures and ensure reliability. It was accepted that CFI and NFI values greater than .95 (Brown, 2006; Thompson, 2004) and RMSEA values equal to or less than .08 indicate reasonable model fit (Browne & Cudeck, 1993; Fabrigar & Wegener, 2012). These findings were presented in the results section. The SPSS 25 and AMOS 25 statistical programs were used to conduct these analyses. Characteristics of the scales were also presented in the Table 1.

RESULTS

EFA, CFA, and reliability analysis findings

Portfolio practice scale: Developed to assess teachers' portfolio practices in terms of content, child participation, and sharing. The "content" factor indicates the components and organization of the portfolio content (e.g., "Organizing portfolio according to specific criteria like development area, subject, date."). "Child participation" presents information regarding the children's active engagement within the portfolio process (e.g., "Deciding what to include in portfolio with children"). "Sharing" also provides information about teachers' practices of sharing portfolios with different stakeholders, including the children and their families (e.g., "Organizing portfolio sharing days"). It was asked of teachers to rate how often they implement specific practices from these three factors. It was designed as a 5-point rating scale ranging from "never" (1) to "always" (5) and consisted of 13 items.

Initially, factor analysis with principal axis factoring was conducted for 14 items through direct Oblimin rotation, and a three-factor structure was revealed. The KMO value was .905, and Bartlett's Test of Sphericity was determined to be significant ($\chi 2$ (91) = 2052, $p < .001$), thus verifying the data suitability for factor analysis. Additionally, all communality values were above .30. Whereas only for the fourteenth item (Sharing the portfolio with the child's next teacher), it was found to be .180. However, it was an essential item to investigate and get an indication about its practice by considering the benefits for the future teacher. Therefore, these were retained for investigation, and three factors were determined in a scree plot, as expected. Moreover, a three-factor structure was revealed through the eigenvalue greater-than-one rule, which explained a total of 63.60% variance. Thus, it was recognized that almost all items (except items 9 and 10) loaded to the three related components. This suggested that it was useful to investigate potential explanations for low loaded items within the literature, for example, whether this may have occurred due to "poor item design, inadequate sampling or inappropriate inclusion of the variable" (Fabrigar & Wegener, 2012, p. 138). Therefore, for clarification, the wording of these items was revised following the pilot study, and the

decision was made to re-investigate them through CFA. The Cronbach's alpha values were calculated for each of these dimensions at .84 for "content", .79 for "child participation", and .86 for "sharing".

In CFA, with the main study data, following modifications, all items loaded significantly to the respective factor except item 14 (Sharing the portfolio with the child's next teacher), which loaded with a value of .144. As the same problem appeared in the pilot study, it was decided to exclude this item from the scale. Following the item deletion, the CFA results showed that the three-factor model structure indicated a reasonable fit with the following fit indices $\chi 2/ df = 3.788$, $p < .001$, CFI = .966, NFI = .952, and RMSEA = .080. Standardized estimated ranged from .608 to .678 for "content", .697 to .795 for "child participation", and .775 to .789 for "sharing". Moreover, the Cronbach's alpha coefficients were estimated as .84 for "content", .84 for "child participation", and .82 for "sharing". Item total correlations also indicated that items are correlated with the total scale (ranging from .52 to .68 for "content," from .59 to .74 for "child participation," and from.65 to .71 for "sharing").

Portfolio norms scale: Developed to measure teachers' both personal norms and subjective norms regarding portfolio assessment. It consists of 10 items, and it was designed as a 7-point rating scale ranging from "strongly disagree" (1) to "strongly agree" (7). "Personal norms" referred to the teacher's personal feelings of obligation to utilize portfolio assessment (e.g., "I use portfolios to improve my teaching"), while "subjective norms" meant the social pressure they felt to utilize portfolio assessment (e.g., "I use portfolios because of the school administrations' expectations to use them").

Initially, factor analysis with principal axis factoring was conducted on ten items using direct Oblimin rotation, and a two-factor structure was revealed. The KMO value was .789, and Bartlett's Test of Sphericity was found to be significant ($\chi 2$ (45) = 1380, $p < .001$), as a result, verifying the data suitability for factor analysis. All communality values were above .30, and a scree plot indicated two factors. Moreover, a two-factor structure was revealed according to the eigenvalue greater-than-one rule, explaining 62.46% of the variance. Additionally, all items loaded with two related components, and Cronbach's alpha values were calculated at .87 for "personal norms" and .82 for "personal norms". Then, in CFA with main study data, model's fit indices indicated a reasonable fit with $\chi 2/df = 3.726$, $p < .001$, CFI = .957, NFI = .952, and RMSEA = .079. Standardized estimates ranged from .592 to .963 for "personal norms" and .411 to .880 for "subjective norms." Furthermore, the Cronbach's alpha coefficients were .87 for "personal norms" and .83 for "subjective norms". Item total correlations also indicated that items are correlated with the total scale (from .60 to.83 for "personal norms" and from .42 to .75 for "subjective norms").

Portfolio-related behavioral beliefs scale: Developed to determine teachers' beliefs regarding the potential benefits of portfolio assessment (e.g., "Identify the strengths of children"). It consists of 15 items with one dimension, and it was designed as a 7-point rating scale ranging from "Not at all" (1) to "Completely" (7). Initially, factor analysis with principal axis factoring was conducted on 15 items. The KMO value was .957, and Bartlett's Test of Sphericity was also found to be significant ($\chi 2$ (105) = 7666, $p < .001$), therefore verifying the data suitability for factor analysis. All communality values were reached above .30, and one factor indicated in the scree plot. Similarly, the eigenvalue greater-than-one rule revealed a one-factor structure, explaining 77.40% of the variance. All items were loaded to one factor. The Cronbach's alpha value was also calculated at .98. Then, in CFA with main study data, results indicated that the one-factor model fit the data reasonably well ($X^2/df = 5.347$, $p < .001$, CFI = .964, NFI = .955, and RMSEA = .08). Standardized estimates ranged from .721 to .888. Moreover, Cronbach's alpha coefficient was estimated as .97. Item total correlations also indicated that items are correlated with the total scale (from .74 to .88).

Portfolio-related attitude scale: Developed to identify teachers' attitudes regarding portfolio assessment, which refers to their favorable or unfavorable assessments of portfolio assessment (e.g., "Necessary-Unnecessary"). It was designed on a 7-point semantic differential scale and consisted of seven items with one dimension. Initially, factor analysis with principal axis factoring was conducted on seven items. The KMO value was .928, and Bartlett's Test of Sphericity was also found to be

significant ($\chi 2$ (21) = 3464, $p < .001$), therefore verifying the data suitability for factor analysis. All communality values were above .30. Consistent with the scree plot, one factor, explaining 84.89% of the variance, appeared according to the eigenvalue greater-than-one rule. All items were loaded to one factor. The Cronbach's alpha value was also calculated as .97. Then, in CFA with the main study data, the model fit indices were at an acceptable level: X^2/df = 3.244, $p < .001$, CFI = .992, NFI =. 988, and RMSEA = .072. Standardized estimates were between .829 and .915. Furthermore, Cronbach's alpha coefficient was estimated as .96. Item total correlations also indicated that items are correlated with the total scale (from .83 to .91).

Portfolio-related self-efficacy beliefs scale: Developed to measure teachers' feelings of competency regarding portfolio assessment (e.g., "To what extent can you provide active participation of children in the portfolio process?"). It is unidimensional with 14 items, and it was designed as a 7-point rating scale ranging from "Not at all" (1) to "Completely" (7). Initially, factor analysis with principal axis factoring was conducted on 14 items. The KMO value was .945, and Bartlett's Test of Sphericity was found to be significant ($\chi 2$ (91) = 5179, $p < .001$), therefore verifying data suitability for factor analysis. All communality values were above .30, and the scree plot indicated one factor. Similarly, one factor emerged according to the eigenvalue greater-than-one rule, explaining 68.01% of the variance. It was seen that all items were loaded to the hypothesized factor. Cronbach's alpha value was also calculated at .96. Then, in CFA with main study data, model's fit indices indicated a reasonable fit with X^2/df = 3.929, $p < .001$, CFI = .966, NFI = .962, and RMSEA = .080. Standardized estimates ranged from .670 to .817. Furthermore, the Cronbach's alpha coefficient was .95. Item total correlations also indicated that items are correlated with the total scale (from .68 to .81).

Portfolio-related barrier perceptions scale: Developed to determine teachers' perceptions regarding factors which inhibited their practice of portfolio assessment (e.g., "Crowded classroom"). This is a unidimensional scale with 11 items. It was designed as a 7-point rating scale ranging from "Not at all" (1) to "Completely". Initially, factor analysis with maximum likelihood method was conducted on 11 items. The KMO value was .795, and Bartlett's Test of Sphericity was significant ($\chi 2$ (55) = 1782, $p < .001$), which verified the data suitability for factor analysis. All communality values were above .30, and one factor indicated in the scree plot. Similarly, the eigenvalue greater-than-one rule revealed a one-factor structure, explaining 40.97% of the variance. All items were loaded to one factor. The Cronbach's alpha value was also calculated at .86. Then, in CFA with main study data, results indicated that the one-factor model fit the data reasonably well (X^2/df = 3.883, $p < .001$, CFI = .968, NFI =. 958, and RMSEA = .080). Standardized estimates ranged from .571 to .773. Moreover, Cronbach's alpha coefficient was estimated as .91. Item total correlations also indicated that items are correlated with the total scale (from .59 to .73).

Portfolio-related intention scale: Developed for identifying teachers' willingness to expend effort regarding portfolio assessment (e.g., "I will organize portfolio sharing days in the next year."). It consisted of four items with one dimension, and it was designed as a 7-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7). Initially, factor analysis with principal axis factoring was conducted on four items. The KMO value was .835, and Bartlett's Test of Sphericity was significant ($\chi 2$ (6) = 1004, $p < .001$), therefore verifying data suitability for factor analysis. All communality values were above .30, and the scree plot indicated one factor. Consistent with the scree plot, one factor, explaining 77.95% of the variance, according to the eigenvalue greater-than-one rule. All items were loaded to one factor. The Cronbach's alpha value was also calculated at .90. Then, in CFA with the main study data, the model fit indices indicated well fit with X^2/df = .223, $p < .001$, CFI = 1.000, NFI = 1.000, and RMSEA = .000. Standardized estimates were between .779 and .846. Furthermore, Cronbach's alpha coefficient was estimated as .90. Item total correlations also indicated that items are correlated with the total scale (from .73 to .83).

DISCUSSION

The constructs of the developed scales were determined with respect to both TPB and the literature on portfolio assessment in early childhood education. TPB has been used in a variety of

research studies in the literature (e.g., Dunn et al., 2018; Knabe, 2012; Macfarlane & Woolfson, 2013; Martin & Kulinna, 2004; Menand et al., 2021; Yan, 2014). However, it has not been integrated into portfolio assessment in early childhood educations. Therefore, there are no developed scaled related to these constructs. In this study, the scales were developed to investigate early childhood teachers' portfolio practices and predictors, which are practice, norms, behavioral beliefs, attitude, self-efficacy beliefs, barrier perceptions, and intention. To test the validity and reliability of the newly developed scales, different methods, e.g., internal consistency with the alpha coefficient, content validity by using an expert review, and structural validity by using EFA and CFA were adopted. As a result, it was determined that practice scale consists of three factors, which were titled as content, child participation, and sharing, and norms scale covers two constructs including personal norms and subjective norms. The other ones were also determined as consisting of one factor, which were called as behavioral beliefs, attitude, self-efficacy beliefs, barrier perceptions, and intention. Diagrams of the scales are provided in the Appendix.

Analysis results supports the three dimensional construct of portfolio practice scale (content, child participation, and sharing), and this is consistent with the available literature on this topic. To explain, to serve its assessment purpose, portfolio content has an important role. To make sure to include information about progress, it might be necessary to include classroom assessments, not only performance products. It is important to ensure that all developmental and subject matter areas are adequately documented for all children, and a child's thinking and learning process are also documented (McAfee et al., 2016). Another construct, child active participation in portfolio process is also important to reach its offered benefits. Children's involvement makes it a portfolio rather than only a work folder (Shores & Grace, 1998). For instance, to reflect individuality and child uniqueness, children select some products. Child selection provides more value and ownership of portfolio by the child, and it provides variety in each child's portfolio (Kingore, 2008). Furthermore, portfolios become a tool for sharing with families and other stakeholders into the education process. Those improve communication between child, teacher, and parents as providing observable products and understandable or concrete evidence about child performance (Kingore, 2008; Stiggins, 2005). Thus, practice scale was constituted of three factors including content, child participation, and sharing, which were titled according to the content of the constructs.

According to analysis results, norms scale also consists of two factors as personal norms and subjective norms. Personal norms and subjective norms were found as a predictor of intention in different research studies (e.g., Bamberg et al., 2007; Harland et al., 1999; Roos & Hahn, 2019; Yan & Cheng, 2015), and these were constituted as a single factor in these research studies (e.g. Tsigilis et al., 2006; Yan, 2014). Similarly, in this study, these two constructs were brought together and determined as two factors of portfolio norms scales. Moreover, in line with the literature, other scales (behavioral beliefs, attitude, self-efficacy beliefs, barrier perceptions, and intention) were determined as one factor. For instance, behavioral beliefs include items related to the benefits of portfolio assessment. Teacher beliefs about the assessment processes have an impact on their processes of assessment practices and also guide their instructional practices in the classroom (Barnes et al., 2017). In the related literature, a variety of benefits of portfolio assessment were reported including demonstration of student growth and progress over time; facilitation of communication and collaboration among teachers, students, and parents; and providing opportunities to transform teaching to meet the needs of individual students (Hou & Hsieh, 2019; Kim & Yazdian, 2014). These points were included in this scale as formulating one factor.

Likewise, self-efficacy, intention and attitude were included in variety of the research studies related to TPB and similarly consisted of one factor or become a construct of the scale (e.g., Patterson, 2000; Teo et al., 2016; Tsigilis et al., 2006; Yan, 2014; Yan & Cheng, 2015). To explain, self-efficacy refers to an individual's beliefs in capabilities to achieve a goal or produce a performance which has an impact on an individual's life and determines individual feelings, thoughts, words, actions, and interactions (Bandura, 1997). According to Bandura (1977), self-efficacy has two dimensions: personal efficacy and outcome expectancy. People practice actions if they believe in their abilities (personal efficacy) and if they believe that actions will result in desirable outcome (outcome

expectancy). In this study, personal efficacy dimension was included and it is called portfolio related self-efficacy beliefs.

To conclude, a number of scales were developed on portfolio assessment based upon the extended TPB, and their validity and reliability were ensured with required analysis as a part of this study. The exploratory factor analysis results presented the factor structure of the scales and then, these were confirmed by confirmatory factor analysis. Cronbach's alpha test also ensured the reliability of the constructs. When all of these values are examined, it has been determined that the results obtained are within the range of acceptable values specified in the literature.

Although the sample size is sufficient in this study, those can be examined with a larger group of teacher participants in future research studies. Predictive impact of these variables on teachers' portfolio practices might be investigated by hypothesizing models and testing them with advanced statistical methods. They might also be enriched in future studies by adding different constructs or including different assessment methods. Identifying relationships and examining factors affecting teachers' portfolio practices might help to understand teacher participation in the portfolio process and help teachers to successfully practice portfolio assessment process (Kiser, 2008).

Conflicts of Interest: No potential conflict of interest was declared by the authors.

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Table 1 Characteristics of the Scales

Scale	Number of factors	Factors	Number of items	Sample item	Cronbach's alpha
1.Portfolio Practice	3	Content	6	"Organizing portfolio according to specific criteria like development area, subject, date"	.84
		Child participation Sharing	4	"Deciding what to include in portfolio with children"	.84
			3	"Organizing portfolio sharing days"	.82
2.Portfolio Norms	2	Personal norms	4	"I use portfolios to improve my teaching"	.87
		Subjective norms	6	"I use portfolios because of the school administrations' expectations to use them"	.83
3.Portfolio-related Behavioral Beliefs	1	Behavioral beliefs	15	"Identify the strengths of children"	.97
4.Portfolio-related Attitude	1	Attitude	7	"Necessary-Unnecessary"	.96
5.Portfolio-related Self-Efficacy Beliefs	1	Self-efficacy beliefs	14	"To what extent can you provide active participation of children in the portfolio process?"	.95
6.Portfolio-related Barrier Perceptions	1	Barrier perceptions	11	"Crowded classroom"	.91
7.Portfolio-related Intention	1	Intentions	4	"I will organize portfolio sharing days in the next year"	.90

APPENDIX

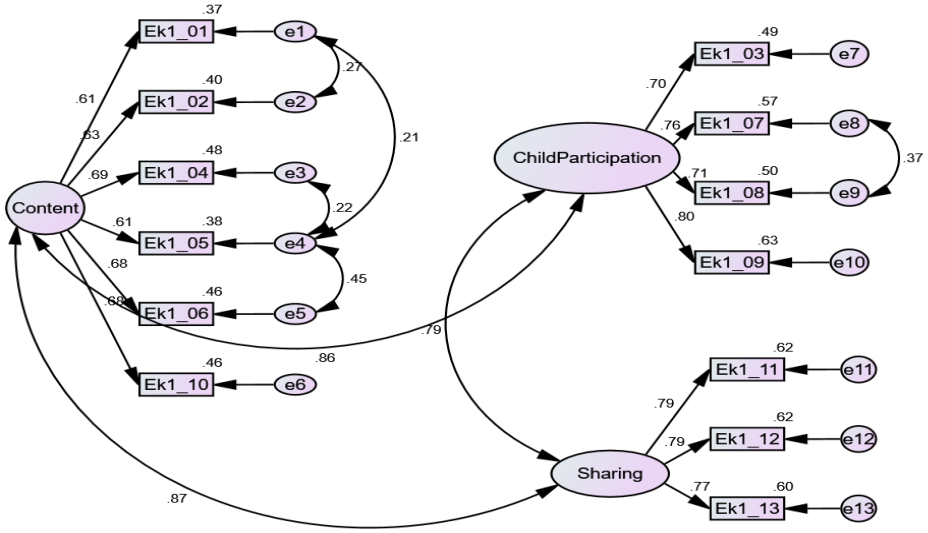

Figure 1. Diagram of Portfolio Practice Scale

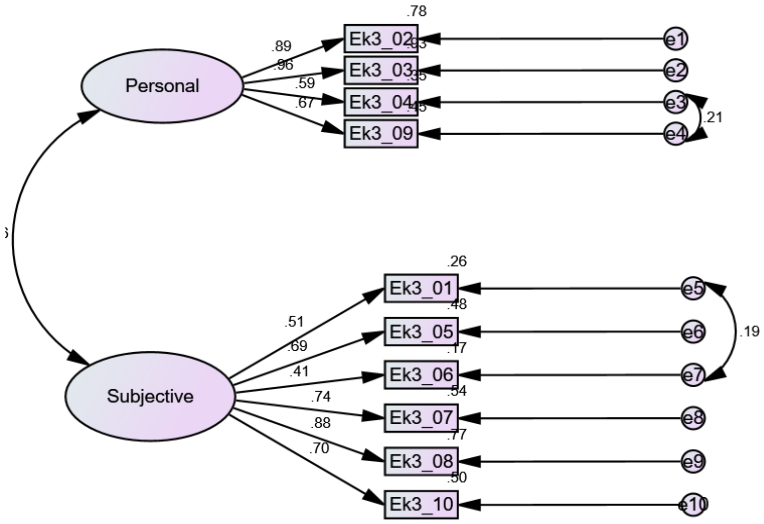

Figure 2. Diagram of Portfolio Norms Scale

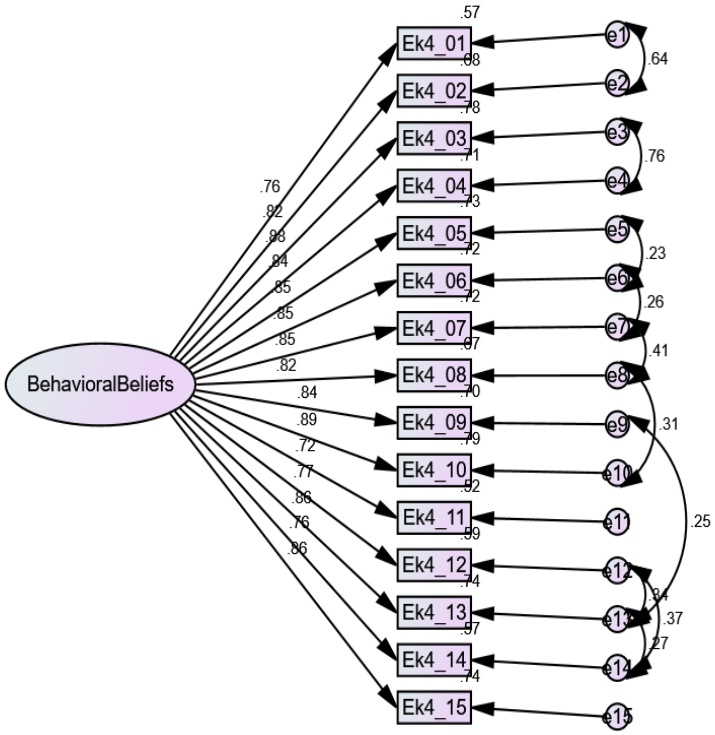

Figure 3. Diagram of Portfolio-related Behavioral Beliefs Scale

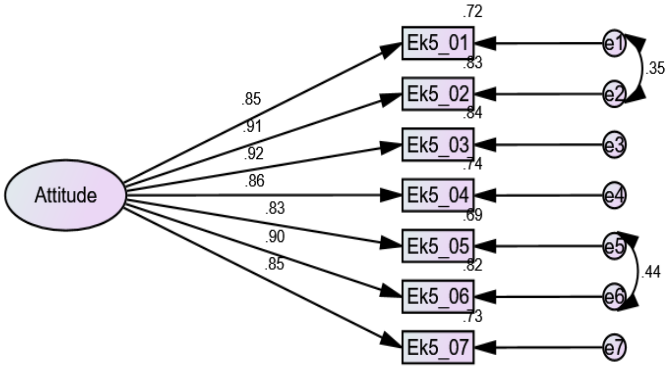

Figure 4. Diagram of Portfolio-related Attitude Scale

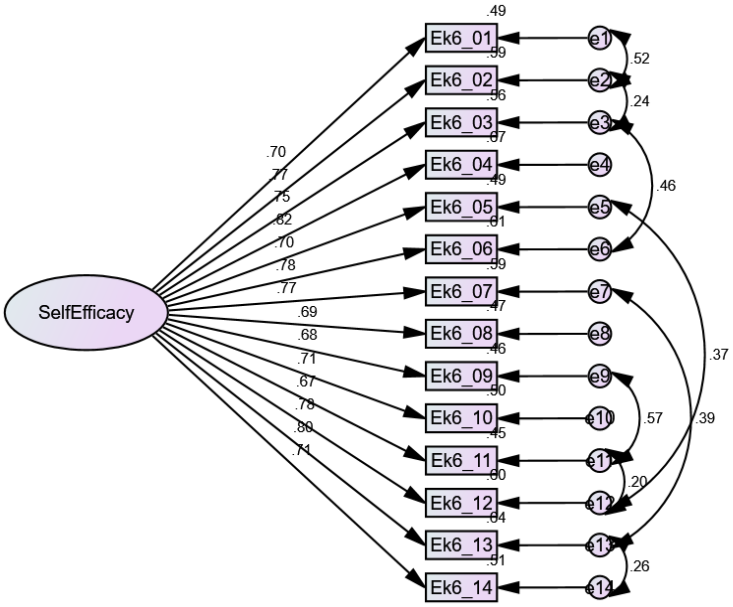

Figure 5. Diagram of Portfolio-related Self-Efficacy Beliefs Scale

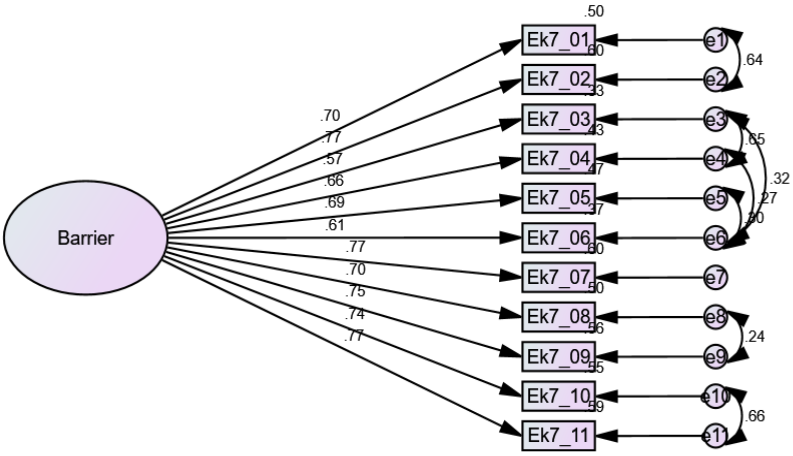

Figure 6. Diagram of Portfolio-related Barrier Perceptions Scale

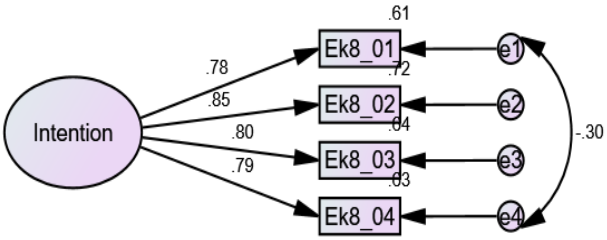

Figure 7. Diagram of Portfolio-related Intention Scale

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Analysis of Visuals of Women in the 9th Grade History Textbook

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Abstract

Advances in the field of women's history have led to debates on the visibility of women in history textbooks. Some of these discussions focus on the visuals of women in history textbooks. In this study, which was conducted with a qualitative approach and document analysis method, the visual images of women in the 9th grade history textbook used in the 2022-2023 academic year were analyzed. Content and semiotics analysis were utilized together to conduct the research. According to the findings of the study, the rate of visuals containing female figures is quite low compared to male visuals. While 66 of the 79 visuals containing human figures include men, only 13 visuals contain female figures. Additionally, in most of the visual, female figures are not recognizable and the images do not have a direct relationship with women's history. The main function of images is to fill up the spaces allocated for the visual in the book without any particular purpose. It can be argued that the visuals in the 9th grade history textbooks were not prepared with the concern of reflecting women's history and experiences. Although representative images are used for male figures for whom there are no real-life visual images, this is not practiced for female figures. A significant effort needs to be made in order to include women's history and visuals in history textbooks. Visuals should be used in a way that develops historical thinking skills instead of only decorating textbooks. Within the framework of the constructivist approach, students should be enabled to access information about women's history through visuals and to construct information on their own.

Keywords: Women's History, Gender, Textbook, History Textbook, Visuals of Women Behavior

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INTRODUCTION

Textbooks, which have an important role in shaping society and generations, provide an overview of what should be learned and taught with their content and visuals (Karacan, 2017; Nene, 2014). Textbooks, which are the main source for teachers and students, differ from other books in terms of content, language, expression and visuals. Furthermore, the textbooks have the feature of reflecting the values, beliefs, attitudes and behaviors of the society as a means of educating citizens (Çelik, 2020). Textbooks prepared in line with curricula are considered critical for both learners and teachers (Kılıç & Seven, 2002).

It is significant that textbooks are appropriate to the age and knowledge level of students and consist of rich texts equipped with cognitive and affective skills (Çeçen & Çiftçi, 2007). They should develop students' thinking abilities, support their independent learning and enable them to reveal their individual thoughts (Karacan, 2017). For this reason, textbooks should be prepared with great care and according to pedagogical principles.

One of the issues that should be carefully considered during the preparation of the textbooks is the visuals. Because a picture/image is worth a thousand words (Nene, 2014; Chiponda & Wassermann, 2015). The visuals are tools such as photographs, pictures, cartoons, graphics, sketches, tables, diagrams, maps, etc. These tools appear as a visual presentation of an object, sign, person, event or situation (Güneş, 2013). The visuals to be used in textbooks have functions such as attracting students' attention, motivating them, making it easier to remember the subject, making sense of and interpreting abstract concepts, and ultimately helping them learn the subject. As these features are explored more, the proportion of visuals in textbooks is increasing (Chiponda & Wassermann, 2015; İşler, 2003; Lee, 2010; Yaşar & Şeremet, 2007).

An effective textbook should be enriched with visuals and made attractive. Colorful pictures and photographs should be used for this purpose (Şahin & Yıldırım, 1999). According to Article 6 of the Regulation on Textbooks and Educational Tools of the Ministry of National Education dated 2021, "*Visual design and content design should be written in a way to support learning and taking into account the developmental characteristics of students.*" In order to use the visuals in textbooks effectively, it is expected that the visuals should be compatible with the content (Yaşar & Şeremet, 2007), support the content and be appropriate for the student level (Halis, 2004; İşler, 2003; Taşkın & Açıkalın, 2020). Visuals used in this way are effective in developing students' critical thinking skills and obtaining permanent information (Yalın, 1996). In addition, illustrations and visuals in textbooks have the potential to develop and motivate students, improve their language skills in terms of writing skills, and free students' brains from usual thinking way (Cho & Kim, 1999; Fang, 1996). In a textbook, students notice pictures before the topic. These pictures also develop students' imagination and affect their creativity (Kasmaienezhadfard et al., 2015).

Researchers underline that the visuals used in the textbooks should have high print quality (Demircioğlu, 2011), be clear and understandable (Carney & Levin, 2002), make the content concrete (Ceyhan & Yiğit, 2004) and increase students' thinking skills (Taşkın & Açıkalın, 2020). In consequence, the lacking purpose and quality of the visuals used in the textbooks appear as one of the main problems.

When it comes to history lessons, significance of visuals become even more important. According to Demircioğlu (2005), the fact that the topics covered in the lessons are too abstract for students and deal with the past may cause students to develop negative attitudes towards the history lesson. Since history lessons are not suitable for experimentation and observation, different materials are needed for students to make sense of and concretize the subject (Paykoç, 1991). Undoubtedly, the visuals are at the forefront of these materials. It is also essential to make the visuals in the history textbooks suitable for the purpose of history teaching.

It is known that teaching through visual descriptions is more effective in the context of permanent learning (Demirel et al., 2002). The pictures and photographs used in history lessons, unlike the subject text, provide convenience to teachers in revealing many messages about the period described (Köstüklü, 1999). The visuals used in the appropriate places/topic in the course accelerate the students' understanding of the processes in the program, and increase the efficiency of the course by facilitating the transfer of information (Hurduzeu, 2016). However, if a visual is to be analyzed, the questions should be prepared in advance and the analysis process should be coordinated. Thus, students' understanding of historical facts will gain more clarity (Sieber, 2002). Teachers need to help students critically analyze visual images such as pictures, maps, charts and graphs. It should be explained to the students how they can gain knowledge and comment on these elements (Paykoç, 1991).

Studies on the visuals in history textbooks show that teachers do not find the visuals in history textbooks functional and qualified. It also reveals that teachers are not sufficiently equipped on how to use visuals in lessons (Demircioğlu, 2011; Köse & Türkan, 2018).

The visuals in history textbooks should be inclusive as well as qualified and functional. Because the science of history is for humanity to know and recognize itself (Collingwood, 2001). This aim is also necessary for history lessons that transfer the past knowledge of humanity to new generations. It is a scientific and educational responsibility to integrate into history textbooks the experiences of women, who make up half of humanity, and the visuals that shed light on these experiences.

In parallel with gender studies, the images attributed to women in history textbooks and the level of women's visibility in history textbooks have been questioned. One of the main goals of these studies has been to increase the visibility of women in curricula, textbooks and the education system (Nene, 2014). Textbooks, which maintain their powerful role in education, have the potential to make important impressions on students and deeply influence their attitudes (Mills, 1994). History textbooks are important tools for producing, interpreting and transforming gender roles into behaviors (Pamuk & Muç, 2021). It is highly likely that students accept the information provided in history textbooks and the images presented about people without questioning them and develop a perspective based on them (Nene, 2014). Studies also draws attention to the psychological consequences of excluding women from history textbooks. It is stated that in a history textbook without women, especially female students will feel inadequate, worthless and insecure (Mills, 1994; Nene, 2014). The fact that the visuals, which attract students' attention before the texts and contain more messages than a word, do not include women is seen as an important deficiency in the context of gender equality (Aydın, 2022; Nene, 2014).

It is seen that the Ministry of National Education has taken some steps to ensure gender equality in history programs. The 9th grade history curriculum (2007) includes the following statement about its implementation: "*Outcomes should be addressed from a holistic perspective in which political, social, cultural and economic events are presented together. Attention should be drawn to the contribution of men and women in the formation of civilizations and cultures and to the fact that the subject of history is "human beings"* (Article 8). The Ministry of National Education (2022) also adopted the principle of "*social representation should be taken into account in design elements*" in the examination of draft textbooks. One of the ways to include women's history in history textbooks is to increase the visuals of women in the books and to use these images functionally. Despite the explanation given in the program and this principle stated in the draft, it is not possible to claim that the visuals of women in history textbooks are sufficient. Because the studies emphasize the proportional inequality between male and female visuals and reveals this situation as a problem in terms of gender equality (Aydın, 2022).

Studies on the visuals of women in history textbooks focus on the proportion of visuals representing women and the resulting images, in the context of gender or women's history studies. In her study, Demircioğlu (2014) states that the visuals in 10th and 11th grade history textbooks are

mostly male-centered and women and children are not included sufficiently in the visuals. Can (2009) point out that it is not possible to see women in history textbooks. She suggests that attention should be paid to the use of visual materials (miniatures, paintings, photographs, drawings, etc.) appropriate to women's history. Similarly, Aydın (2022) emphasizes the absence of visuals of women in history textbooks and he evaluates this deficiency as a gender equality problem. Nene (2014), in her study analyzing the visuals of women in South African Grade 12 history textbooks, states that women still face the barrier of gender in history textbooks. Rayle (2020) reveals that history textbooks in the USA, which focus more on military and political issues, do not fully reflect the roles, experiences and efforts of women and the history textbooks should be improved in this aspect. Chick (2006) explains that the male visuals more than female visuals in K-12 American history textbooks. Chiponda and Wassermann (2015), on the other hand, draw attention to the fact that history textbooks in many countries are written in a male-centered manner, women's experiences are ignored and women's visuals are insufficient.

This study, which deals with the visuals of women in the current 9th grade history textbook (2021), is important in terms of revealing the level of reflection of women's history and gender studies, which have been on the agenda for a very long time, in history textbooks. At the same time, it has the potential to contribute to the field in terms of shedding light on the level of representation of women in current history textbooks.

Research Objective

This study aims to analyze the visuals of women in the 9th grade history textbook and to reveal the quality and functionality of these visuals**.** And also, the ratio of female visuals to other visuals in the textbook was discussed. Within the framework of the purpose of the research, answers to the following problems were sought:

- What is the distribution of the visuals in the 9th grade history textbooks according to the units?
- What is the distribution ratio of the women visuals in the 9th grade history textbooks compared to the total visuals and men visuals?
- Who are the women mentioned in the visuals?
- What kind of visuals were used for women?
- What kind of images do the visuals of women present about women?
- Are the visuals of women functionally used in the textbook?

METHOD

Research Model

This study, which aims to analyze the visuals of women in the 9th grade history textbook, was conducted with a qualitative approach. Qualitative researches, with the flexible opportunities, enable to follow up the process that reveals the perceptions and events in their natural environments in a realistic and holistic way through qualitative data collection methods such as observation, interview and document analysis (Büyüköztürk et al., 2019; Karataş, 2015).

Murray (2010) defines method as a set of measures and rules used by those working within a certain discipline (as cited in Nene, 2014). In terms of being suitable for the purpose of the research, document analysis was preferred as a method. Document analysis is the method of providing data by analyzing written documents containing information about the facts and events related to the subject

under research. In this method, the researcher needs to decide which document is important and what can be used as a data source by considering the research topic. In the process of document analysis, primarily, the authenticity of the documents should be checked by accessing the documents, afterwards the ways such as understanding the documents, analyzing the needed data and using the data should be followed in order (Yıldırım & Şimşek, 2008). Document analysis also enables content analysis.

Sample Method

In qualitative research, the small sample selected purposefully enables the researcher to focus on the subject in depth (Patton, 2002). In order to address the issue in more detail, the sample was kept small and the 9th grade history textbook (Yüksel et al., 2021) used in secondary schools in the 2022-2023 academic year was selected by purposeful sampling method. Purposeful sampling allows for in-depth study of situations that provide rich information about the research topic (Yıldırım & Şimşek, 2008).

Data Analysis

In this study, content and semiotics analysis were used together. Content analysis was preferred to ensure the reliability of the data and to convert qualitative measures into quantitative measures.

According to Berg and Lune (2015), content analysis is the careful, detailed and systematic examination and interpretation of a particular material in order to reveal patterns, themes, prejudices and meanings. Content analysis is also explained as objectively and systematically classifying the information contained in written and oral sources and making inferences by converting them into numbers (Tavşancıl & Aslan, 2001). According to Bernard (2010), content analysis is a method that focuses on the content and intrinsic features of printed materials such as textbooks. In order to conduct content analysis on a text, coding should be done and categories should be identified (as cited in Nene, 2014, p. 50). According to Bernard (2010), content analysis is a method that focuses on the content and intrinsic features of printed materials such as textbooks. In order to conduct content analysis on a text, coding should be done and categories should be identified (as cited in Nene, 2014, p. 50).

In this study, two categories were used in the content analysis process of the images of women in the 9th grade history textbook. These categories are as follows: 1. The ratio and number of visuals including women in the textbook 2. The presentation way of women in the visuals. Firstly, all the images in the 9th grade history textbook were counted within the framework of the categories. Afterwards, the total number of male and female visuals was determined, and the ratio of female visuals to total visuals and male visuals was calculated. only woman, only man and male-female group visuals were counted and the data were reflected in the tables in the form of numerical values.

Semiotic analysis was used to analyze, understand and interpret the visuals of women in the 9th grade history textbook. Semiotics is the study of signs in order to derive meaning from them (Harrison, 2003). Signs can be words, sounds, photographs, pictures or visuals (Bulut & Yurdaışık, 2005; Chiponda & Wassermann, 2015). Signs have two components: the signifier and the signified. In order to reveal the meanings of signs, a systematic examination is necessary (Chiponda & Wassermann, 2015, Rose, 2007). For semiotics, signs have both connotation and denotation meanings. Therefore, the terms denotation and connotation describe the relationship between the signifier and the signified. In visual semiotics, the interpretation is made by using the direct and connotative meanings of the visuals (Parsa, 2012). In order to reveal the messages and meanings conveyed by images, it is necessary to systematically examine the visuals (Rose, 2007), and semiotic deals with everything that can be taken as a sign (Nene, 2014). In this research, the following questions were used for the semiotic analysis of women's visuals and data:

1. What is the kind of woman visual used in the textbook?
2. Where is the woman visual taken from?
3. In which unit and subject are the women's visuals included?
4. Is the woman in the visual famous?
5. Is the name of the woman included in the visual?
6. What is nationality of the woman in the visual?
7. What does the woman in the visual do?
8. How is the woman in the visual presented?
9. What information does the visual of the woman reveal?
10. What is the image of the woman in the visual?

And also, with the data obtained within the framework of the above questions, the functionality of the visuals of women were also analyzed and presented in the relevant research questions in the context of the relationship between text and image.

The coding process is of great importance in the reliability of content analysis. This situation necessitates that two different coders encode the same text in the same way or that the same coder encodes the text in the same way at two different times (Bilgin, 2014). In this study, in order to ensure coding consistency during data analysis, a doctoral student from the field of education was asked to do the coding. Two separate codings made by the researcher and the doctoral student were compared using Miles and Huberman's (1994) agreement formula (Reliability Percentage=Agreement/(Total Agreement + Disagreement)x100). The agreement rate between the two codings was 0.91.

Apart from this, it was evaluated whether all visuals of women were used functionally or not and the visuals were given in the study. In this way, the numerical data and findings of the content analysis were confirmed. One of the most important strategies to ensure the internal reliability of the research is to present the data with direct quotations with a descriptive approach (Yıldırım & Şimşek, 2008). In order to increase the internal reliability of the study by applying the suggested strategy, the texts related to the visuals of women were directly quoted and the visuals were given within the study.

FINDINGS

The findings obtained in the study are presented within the framework of research problems.

Distribution of The Visuals in the Units of 9th Grade History Textbook

In the first problem of the study, the distribution of the visuals in the units of 9th grade history textbook was analyzed. The findings are presented in Table 1.

Table 1 Distribution of The Visuals in the Units of 9th Grade History Textbook

Unit Name	Total Number of Visuals	Number of Visuals Including Human Figure	Number of Visuals Not Including Human Figure
Unit 1: History and Time	14	5	9
Unit 2: Early Periods of Humanity	47	17	30
Unit 3: World in the Middle Ages	19	11	8
Unit 4: Turkish World in the Early and Middle Ages	34	16	18
Unit 5: Emergence of Islamic Civilization	38	13	25
Unit 6: Acceptance of Islam by Turks and the First Turkish Islamic States	28	18	10
Total	180	80	100

According to Table 1, the 9th grade history textbook has 6 units. These units include 180 visuals in total. While 100 of these visuals do not involve human figures, 80 of them include human figures. The visuals containing human figures constitute approximately 44.44 percent of the total number of the visuals. 55.55 percent of the visuals did not include a human figure. In the table, Unit 2 has the highest number of visuals and the least number of visuals is in Unit 1.

The Ratio of Women Visuals in 9th Grade History Textbooks to Total Visuals and Men Visuals

In the second problem of the study, it was tried to reveal the ratio of women visuals in 9th grade history textbooks by comparing to total visuals and men visuals. The findings related to the problem are given in Table 2 and Table 3.

Table 2 Distribution of The Men Visuals in the Units of 9th Grade History Textbook

Unit Name	Number of Visual Images of Men Alone	Number of Visuals Including Men Figures as a Group
Unit 1: History and Time	3	---
Unit 2: Early Periods of Humanity	5	7
Unit 3: World in the Middle Ages	6	4
Unit 4: Turkish World in the Early and Middle Ages	10	3
Unit 5: Emergence of Islamic Civilization	7	4
Unit 6: Acceptance of Islam by Turks and the First Turkish Islamic States	12	5
Total	43	23

According to Table 2, 43 of the visuals contain men alone. Men are given as a group in 23 of the visuals. According to the findings, a total of 66 of the visuals include men. A visual of a mummy related to the Egyptian civilization, it was excluded from the analysis because the gender was not clear (Visual 2.41) and the number of images containing human figures was accepted as 79. As a result, 66 of the 79 visuals containing human figures are related to men. This constitutes 83.5 percent of the visuals. The visuals of men alone have a rate of 54.4 percent.

Table 3 Distribution of the Women Visuals in the Units of 9th Grade History Textbook

Unit Name	Number of Visual Images of Women Alone	Number of Visuals Including Women Figures as a Group	Number of Visuals Including Women-Men Figures as a Group
Unit 1: History and Time	---	---	2
Unit 2: Early Periods of Humanity	--	1	3
Unit 3: World in the Middle Ages	1	---	---
Unit 4: Turkish World in the Early and Middle Ages	1	---	2
Unit 5: Emergence of Islamic Civilization	---	---	2
Unit 6: Acceptance of Islam by Turks and the First Turkish Islamic States	---	---	1
Total	2	1	10

According to Table 3, only 2 visuals in the book include women alone. While 1 visual belongs to the group of women, 10 visuals about the groups consisting of women and men. The data of the table shows that 16.4 percent of the 79 visuals with human figures contain women. However, the 3 visuals presenting women alone, constitute a rate of 3.7 percent.

Women Mentioned in the Visuals in the 9th Grade History Textbook

The women whose names are mentioned in the visuals in the 9th grade history textbook is another problem of the research. No woman's name was found in the visuals. On the contrary, it is seen that the names of many men as historical figures are included. The names of 43 men are obtained from the visuals in the 9th grade history textbook, In terms of their historical roles, it is noticed that most of them are rulers, emperors, kings and statesmen. Those who are outside of political history are mentioned in the visuals as philosophers, historians, religious figures, scientists and literary man.

The Quality of the Visuals of Women Used in the 9th Grade History Textbook

In this problem of the research, the quality of the images of women used in the 9th grade history textbook was evaluated. The findings related to this problem are given in Table 4.

Table 4 The Quality of the Visuals of Women Used in the 9th Grade History Textbook

Unit Name	Visual Number	Visual Name	The Quality of the Visuals
Unit 1: History and Time	Visual 1.4	---	Photograph
	Visual 1.8	Symbol of social unity: Flag	Photograph
Unit 2: Early Periods of Humanity	Visual 2.3	the way of life of the ancient people	Illustration
	Visual 2.18	Example of hieroglyphs on papyrus	Hieroglyph
	Visual 2.25	The habitat of the nomads	Picture
	Visual 2.27	Oil painting “Flight of Prisoners” describing Jewish migrations	painting
Unit 3: World in the Middle Ages	Visual 3.16	Statue of justice representing the Laws of Justinian	Photograph
Unit 4: Turkish World in the Early and Middle Ages	Visual 4.9	Uyghur State flag	Picture
	Visual 4.19	Migration	Picture
	Visual 4.30	Empress of china	Picture
Unit 5: Emergence of Islamic Civilization	Visual 5.5	Hijra (Leon Belly)	painting
	Visual 5.9	Kaaba (Mecca)	Photograph
Unit 6: Acceptance of Islam by Turks and the First Turkish Islamic States	Visual l 6.27	A tile from the Great Seljuk Period	Photograph
Total 3 3			

According to Table 4, there are 13 visuals of women in total. These images consist of photographs, illustrations, hieroglyphs, pictures and paintings. The visuals are distributed as 5 photographs, 4 pictures, 2 paintings, 1illustration and 1 photograph.

Images Revealed About Women by the Visuals Used in the 9th Grade History Textbook

It was examined what kind of images the visuals present about women in this problem of the research. The obtained results are given in Table 5.

Table 5 Images Revealed About Women by theVisuals of Women Used in the 9th Grade History Textbook

Unit Name	Page Number	Visual Number	Visual Name	Image Presented in the Visual
Unit 1: History and Time	15	Visual 1.4	---	Student
	18	Visual 1.8	Symbol of social unity: Flag	Patriotic
Unit 2: Early Periods of Humanity	30	Visual 2.3	the way of life of the ancient people	Primitive Farmer
	37	Visual 2.18	Example of hieroglyphs on papyrus	Ceremonial Beings
	43	Visual 2.25	The habitat of the nomads	Nomad
	45	Visual 2.27	Oil painting “Flight of Prisoners” describing Jewish migrations	Victim / Oppressed
Unit 3: World in the Middle Ages	84	Visual 3.16	Statue of justice representing the Laws of Justinian	Representative of Justice
Unit 4: Turkish World in the Early and Middle Ages	98	Visual 4.9	Uyghur State flag	Khatun
	108	Visual 4.19	Migration	Nomad
	121	Visual 4.30	Empress of china	Empress
Unit 5: Emergence of Islamic Civilization	136	Visual 5.5	Hijra (Leon Belly)	Oppressed/Victim
	140	Visual 5.9	Kaaba (Mecca)	Religious/Hajji
Unit 6: Acceptance of Islam by Turks and the First Turkish Islamic States	203	Visual 6.27	A tile from the Great Seljuk Period	Musician
Total		13	13	

According to the information in Table 5, it is seen that a total of 13 images reveal images of women such as student, patriot, primitive farmer, ceremonial beings, nomad, victim/oppressed, representative of justice, khatun, empress, religious/pilgrim, musician. However, it is not easy for students to reach these images. This is discussed in the functionality of visuals section.

Functionality of Visuals of Women Used in the 9th Grade History Textbook

In the last problem of the study, the functionality of the visuals of women was also analyzed in the context of the relationship between texts and images.

In addition to this, all the visuals were presented in the study and the purposes of their use were discussed.

In the 9th grade history textbook, the first visual containing the women figures is in the 1st Unit titled “History and Time”.

Visual 1.4 (Yüksel et al., 2021)

This visual is given under the topic "What is the method of history?" In the text, it is seen that female students named Begüm and Zehra talked to male students named Ahmet and Halit about the method of history.

Visual 1.4 creates a visualization for this speech text. The girls in the image are reflected in the book with the image of students like boys. In this context, the visual can be evaluated positively. However, it is not clear who is Zehra, who is Begüm, who is Halit and who is Ahmet. At the same time, these students are not included as historical figures in the textbook. Therefore, in general terms, the main function of Visual 1.4 is to create a visualization for the book, and it does not have any purpose related to women's history.

Another visual containing women figure is “The Symbol of Social Unity: The Flag”, which is given under the title of “Why History” in the 1st unit as Visual 1.8

Visual 1.8 The Symbol of Social Unity: The Flag (Yüksel et al., 2021)

In this visual, men and women are in a group. Visual 1.8 is explained with the statement "*The identification of individuals and society under an identity such as Turkish identity is realized through social unity*" (Yüksel et al., 2021, p. 18). National unity and solidarity are put forward in the visual. This is also highlighted with the flag symbol. However, there is no emphasis on the flag in the text, rather the factors that constitute national memory, unity and solidarity are emphasized. History is an important tool that creates this memory. It can be considered positive to draw attention to national unity and solidarity with men and women in the visual, which reveals the image of individuals who love their nation and state. However, both women and men are not very prominent in the visual. The first thing that draws attention in the visual is the flags. Therefore, the presence of women figures in this visual does not seem very meaningful. As with the other visuals, the main function of Visual 1.8 in the book is to provide visualization to the subject. It does not provide any information on women's history. In other words, it does not bring any historical female figure to the forefront.

In the Grade 9 history textbook, Image 2.3, "Lifestyle of the First People", is used under the heading "Lifestyle and Livelihoods of the First People".

Visual 2.3 Lifestyle of the First People (Yüksel et al., 2021)

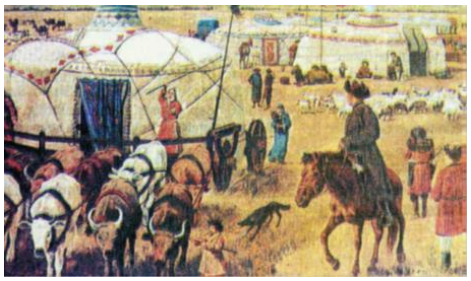
Visual 2.3 is included in the book in order to create visuals for the explanations about the lifestyle and livelihoods of the first people. In the text, it is stated that the first people moved from hunter and gatherer to settled life and started to deal with agriculture and animal husbandry (Yüksel et al., 2021). People are engaged in agriculture and establishing villages in the Visual 2.3. In this visual, farmer men and women are pictured together. However, the bigger male figure stands out in the image. In order to see the female figures, it is necessary to look more carefully at this illustration. It can be said that students can hardly recognize women in this picture. It is very difficult to say that this picture, which visualizes the subject only, reveals a clear information about women's history.

Another image in the 9th grade history textbook is Visual 2.18, which is called as "Example of hieroglyphics on papyrus" (Yüksel et al., 2021).

Visual 2.18 Example of hieroglyphics on papyrus (Yüksel et al., 2021)

Visual 2.18 is included under the topic "The beginning of written culture" and creates a visual for the development of writing. Regarding the visual in the subject: "*Egyptians used tools such as papyrus and brushes as writing tools. Thus, the portability of writing became easier. The Egyptian script has also been a model for the development of the Phoenician alphabet, which consists of 24 consonants*" (Yüksel et al., 2021, p. 37). The purpose of using Image 2.18 is to create a visual about what hieroglyphic writing is. In the visual, there are mythological female figures. Although female figures draw attention with the image of mythological beings, the visual does not have a purpose related to women's history. There is also no information about women in the text.

Visual 2.25, which is included in the "Human and Migration" topic, is called "The living space of nomads" (Yüksel et al., 2021).



Visual 2.25 The living space of nomads (Yüksel et al., 2021)

The nomadic tents and life are tried to be explained in the Visual 2.25. And also it is seen a woman setting up a tent in it. The following information is given about the visual: "*After humans settled down, they stopped following game animals and changing places to feed themselves. In this process, even though there were societies that continued nomadic life (Visual 2.25), their numbers gradually began to decrease in the face of settled societies*" (Yüksel et al., 2021, p. 43). From these sentences, it is realized that the visual is used to show nomadic life. Although a woman figure is seen in the image, it is not directly related to women's history. Additionally, it cannot be expected that the students realize the women in the visual. For the human figures in this visual, the image of nomad comes to the forefront.

The other image of the 2nd Unit, Visual 2.27, is the oil painting titled "Flight of Prisoners", which describes Jewish immigration (Yüksel et al., 2021).

Visual 2.27 the oil painting titled "Flight of Prisoners", which describes Jewish immigration (Yüksel et al., 2021)

This visual is used under the topic "Human and Migration". The following information is given about the visual: "*In 587 BC, the Babylonian ruler Nebuchadnezzar II invaded the Kingdom of Judah, destroyed the Jerusalem Temple and exiled most of the population (Visual 2.27). 70 years after this event, Babylon was captured by the Persian King Cyrus and the Jews in exile were allowed to return*" (Yüksel et al., 2021, p. 45). This information describes the exile and migration of the Jews. Therefore, Visual 2.27 is included in the book to create a visual for the Jewish exile. In the painting presented the exiled Jews, women and men naturally appear together and an oppressed public image comes to the fore for them. Both women and man figures are not prominent in the image. In this context, it does not provide any direct information about women's history.

Image 3.16 is titled "Justice statue representing Justinian's Laws" and included under the subject heading "Laws are Developing" (Yüksel et al., 2021)

Visual 3.16 Justice statue representing Justinian's Laws (Yüksel et al., 2021)

It is referred to the Visual 3.16 in the subject as follows: "*The Justinian Code (Visual 3.16) have the purpose of purifying, curing and deterring the criminal in the crime and punishment system. There is no prison sentence in these laws, instead of this punishment, the measure of closing the criminals in monasteries was applied*" (Yüksel et al., 2021, p. 84). Visual 3.16 is one of the two images presenting a woman alone in the textbook and is a sculpture of justice representing Justinian's Laws. In this visual, the image of a woman representing justice is noticed. However, the main subject of the text is "Justinian's Laws" and the function of Visual 3.16 is to create a visual for these laws. There is no explanation about the visual in the text. And also, the statue of justice in this image is not directly related to the history of women.

Visual 4.9, "Flag of the Uyghur State", is included in the 4th unit under the title "Material and Basic Sources of Power" (Yüksel et al., 2021).

Visual 4.9 Flag of the Uyghur State (Yüksel et al., 2021)

The following information is given in the text regarding Visual 4.9, which shows the flag of the Uyghur State:

> Turks have a nomadic lifestyle around water resources such as rivers and lakes in Central Asia. The tribes live in these designated areas with their animals, which are the mainstay of their economy. Huns, Kok Turks and Uyghurs (Visual 4.8 and 4.9) lived in the chilly, wet, high plateaus called summer pasture (yaylak) in summer; in winter, They lived in warmer plains and valleys called winter quarters (kışlak)" (Yüksel et al., 2021, p.98).

According to given information in the text, it can be said that Visual 4.9 is presented to create a visual for the Uyghur State mentioned. Because there is no relationship in the text about the flag, which is the symbol of the state. However, the figure of the khan and the khatun take place together in this flag picture, and the image of "khatun" can be reached from the visual. Nevertheless, it cannot be said that the visual gives direct information about women's history, since it has no direct relationship

with the text of the subject. As a result, this visual may not attract the attention of the students in the context of women's history.

Another image in the 4th Unit is the "Migration" visual, which is under the title "Migration of Turks from the Motherland" (Yüksel et al., 2021).

Visual 4.19 Migration (Yüksel et al., 2021)

The following information is given about this visual: "*Turkish communities have migrated to other areas by leaving in groups and traveling long distances for various reasons*" (Yüksel et al., 2021, p. 108). In Visual 4.19, there are figures of a woman and a man who migrated under difficult conditions. However, the visual not clear to recognize the gender of the figures. It can be quite difficult for students to choose male and female figures in the image. Apart from this, while the visual contains only two human figures, the given information in the text indicates that Turkish communities emigrated in groups. Moreover, this visual is not consistent with the text. It can readily be claimed that the visual 4.19 is used in the book only to visualize the subject.

Visual 4.30 is in the "First Turkish States and Their Neighbors" subject and belongs to the "Empress of China" (Yüksel et al., 2021). This visual includes a women alone figure.

Visual 4.30 Empress of China (Yüksel et al., 2021)

The text contains the following information about the visual 4.30:

> The Chinese were an advanced society in agricultural economy. For this reason, Turks benefited from Chinese agricultural products and tools from time to time. For example, Kök Turk ruler Kapgan Kagan once took 1250 tons of seed wheat and 3,000 agricultural tools from China as tax. Kök Turks planted the seed wheat they obtained from China in the same year; but none of this wheat grew. Because The Chinese empress, who could not accept paying taxes to Kapgan Khan (Figure 4.30), cooked this wheat and gave it to the Kök Turks. In addition, the value of gold and silver given as gifts was highly low. Understanding the truth, Kapgan Kagan launched a massive raid on China after 698. Until 703, raids were made in the northern provinces of China. Chinese armies of three hundred or four hundred thousand were defeated by Turkish armies of forty-fifty thousand (Yüksel et al., 2021, p. 121).

It is understood that Visual 4.30 is related to the text and gives information about the policy of the Empress of China. Therefore, Visual 4.30 aims to create an idea about the empress mentioned in the text. The name of Chinese empress is not mentioned in the text. This visual reveals the female figure more clearly than the other visuals in the book.

Visual 5.5 Hijrah, given under the subject heading "The First Social Contract", is a painting by Leon Belly.

Visual 5.5 Hijrah (Leon Belly) (Yüksel et al., 2021)

The following information is given for this visual:

> At the time of Muhammad's migration, there was trouble in Medina as well as in throughout Arabia. The conflicts between the polytheist Arab tribes Aws and Hazrec, both among themselves and with the Jews, made life difficult. There were also conflicts among the Jews themselves. Prophet Muhammad wanted to end to tribalism and conflicts within the society in Medina and to eliminate all claims of superiority by integrating the Muslims who had to migrate to Medina (Image 5.5) with the local people (Yüksel et al., 2021, p. 136)

In Visual 5.5 contains Muslim women and men who emigrated. The image of both male and female figures, who stand out with the image of the oppressed, is not clear and unambiguous. It is used to create a visual for the expression "Hijrah" in the text.

In addition, the visual has no purpose to support historical thinking skills and it is not related directly to women's history.

The other image of the 5th Unit is Visual 5.9 named “Kaaba (Mecca)” (Yüksel et al., 2021).

Visual 5.9 Kaaba (Mecca (Yüksel et al., 2021)

In the "Let's comment" box titled "Uthman (Osman) bin Talha and the key to the Kaaba", Image 5.9 is referred to as follows:

> Uthman b. Talha was in charge of the maintenance of the Ka'bah in Mecca (Visual 5.9). In the age of Jahiliyyah, his family carried the door key to of the Ka'bah. The Prophet invited Uthman bin Talha to Islam many times, but received a negative

> response. Even once, the Prophet wanted to enter the Kaaba with the believers, and Uthman bin Talha acted harshly and did not allow them to enter the Kaaba (Yüksel et al., 2021, p. 140).

In the book, Visual 5.9 provide only a visualization to the Kaaba mentioned in the sentences above. In the text describing the Conquest of Mecca, the current image of the Kaaba is used for visualizing. In the visual, it is seen that men and women circumambulate the Kaaba. But neither men nor women are clear. Students cannot be expected to notice women in this visual. Although it contains images of women, since the main purpose of Visual 5.9 is to create a visual for the Kaaba, it is not related to women's history in general. And also, it can be said that it is not appropriate for the historical process since the current photograph of the Kaaba is used instead of the old one.

In the 9th grade history textbook, the last visual containing a female figure is the image named "a tile from the Great Seljuk Period" (Yüksel et al., 2021). It is included in the 6th Unit under the subject heading "Culture and Civilization in the Great Seljuk State".

Visual 6.27 A tile from the Great Seljuk Period (Yüksel et al., 2021)

The book contains the following information about Visual 6.27: "*Seljuks also produced valuable products in other fields of art such as ornaments, inscriptions, calligraphy, miniatures, illuminations, carpets, rugs and tiles (Visual 6.27)*" (Yüksel et al., 2021, p. 203).

When the visual is carefully examined, it is seen that there are female musician figures in the tile. But it is almost impossible to see these figures. The main purpose of using this image is to create a visual for the art of "tile" mentioned in the text. Although it contains a female figure, it has no relation with women's history. The print quality of the visual is also poor.

DISCUSSION CONCLUSION AND RECOMMENDATIONS

With the understanding of social history and feminist efforts, there have been significant developments in the field of women's history and many sources on women's history have been produced. Under the topic of gender, women's roles and experiences in history have been questioned. In line with these developments, the teaching of women's history and the visibility of women in history teaching have also been brought to the agenda. The inclusion of women's history in the textbooks has been an significant part of this topic. In the process of democratization efforts after World War II, approaches were adopted that women and children should be included in history textbooks alongside the male figure as a requirement of human rights (Demircioğlu, 2013). Despite important studies in this area, it is not possible to say that history textbooks allocate enough space to women's experiences. Because researches show that history textbooks in many countries are male-centered, and political and military issues are given priority. Accordingly, female images are quite limited compared to male images (Can 2009; Chick, 2006; Chiponda & Wassermann, 2015; Demircioğlu, 2014; Nene, 2014; Rayle, 2020).

According to the findings of this study-which analyzed the visuals of women in the 9th grade history textbook using content and semiotic analysis, there are 180 visuals in total in the book, excluding maps. 80 of these images contain human figures. Of the 79-visual analyzed, 66 of them are related to men. This constitutes 83.5 percent of the visuals of the textbook. With 13 images in total, the female visuals have a rate of 16.4 percent in the book. These rates reveal that women are almost absent in the visuals. According to the literature, the rate of women's images in history textbooks is quite low compared to men's images. They are even in less preferred positions (Chick, 2006; Chiponda & Wassermann, 2015; Nene, 2014). Alpargu & Çelik (2016), determined that the subjects of women's history have the rate of 4.14 percent in the 9th grade History Textbook. Aydın (2022), in his study, emphasizes the inadequacy of women's visuals in 9th grade history textbooks and that there is a big difference in the rate in favor of men. These results confirm the insufficiency of women's history and visuals in the 9th grade history textbooks.

In the 9th grade history textbook, there are no women's names in the visuals. On the other hand, the names of 43 historical characters were included in 66 of the visuals containing male figures. The mentioned figures in the visuals are rulers and statesmen mostly. This finding confirms that history textbooks prioritize political and military issues and are male-centered. This finding is not unique to Turkish history textbooks. Cabecinhas & Laisse (2021), in their research, state that women's names are rarely mentioned in Mozambican history textbooks and women's political and economic roles are not included. According to them, this is not due to a lack of information about women, but to the lack of use of available information.

In 9th grade history textbooks, the visuals of women consist of photographs, illustrations, hieroglyphs, pictures and paintings. However, the students can hardly recognize female figures in most of these visuals. Therefore, it cannot be claimed that the 13 visuals related to women in the textbook, except a few of them, provide direct information or messages about women.

Through the 13 visuals of women, it is possible to get the images of women as students, patriots, primitive farmers, ceremonial beings, nomads, victims/poor, representatives of justice, khatun, empresses, religious/pilgrims, musicians. But extracting even these information seems quite difficult. Particularly from a student perspective, it is almost impossible that students notice these images through the visuals. Only, the image used to represent the Empress of China (Visual 4.30) can help students visualize and understand the empress directly. In the visuals, men are depicted as more active and dominant, while women are almost unnoticed. On the other hand, it is noteworthy that women in the group have similar roles and images to men. For example, in Image 2.3, which shows the lifestyle of the first people, both men and women are farmers engaged in primitive agriculture.

In the last problem of the research, the relationship between the visuals of women and the texts was evaluated and their functionality was questioned in the context of the information they provide about women's history. According to the findings, the 13 women's visuals presented in the textbook are not related the texts directly, except for the Chinese Empress image. The texts associated with the women's visuals do not include any information about women's history. The main purpose of using these images to fill up the spaces allocated for the visual in the book without any particular purpose. In fact, the women figures in the visuals are unnoticeable and it does not provide any insight about women.

As a result, despite the principle of "*social representation should be taken into account in design elements*" given in the review of draft textbooks of the Ministry of National Education (2022), it is seen that women are not adequately represented in history textbooks. According to Schoeman (2009), an ideal history textbook should pay attention to gender and women's history. But there is still much progress to be made in this field. In particular, there are some problems about presenting women in the textbooks. Because writers and program makers focus on the role of men in history and reflect women's images with the patriarchal perspective. Moreover, they act slowly to integrate women's history into the history textbooks. All these problems make improving difficult in this field (Cabecinhas & Laisse, 2021; Williams & Bennett, 2016).

In general terms, and in the context of the visuals, it is possible to claim that women are invisible in the 9th grade history textbook and the visuals in the book are not intended to reflect women's experiences. For example, in the textbook, constructed pictures are used for male figures for whom no real photographs. However, this method is not preferred for female figures. The findings reveal that the 9th grade history textbook needs to be revised and updated in terms of women's history and visuals. According to Alpargu & Çelik (2016), history textbooks should be developed in the context of gender and the images of women in the textbooks should be analyzed separately Furthermore, it should not be overlooked that history textbooks and visuals play an important role in shaping the image of women today (Aktaş & Özmen, 2014).

It is very noteworthy that textbook authors should act with consideration about the inclusion of women's history and images in history textbooks. It would be more beneficial to use visuals in a way that develops historical thinking skills rather than decorating textbooks. Within the framework of the constructivist approach, students should be enabled to access information about women's history through visuals and to construct information on their own.

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The Development of the Turkish Serenity Scale: A Validation Study*

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Abstract

The goal of this study was to develope Serenity Scale suitable for Turkish culture. The scale's construct validity was investigated using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The association between the Serenity Scale, Peace Scale, and Authentic Happiness Scale was examined in order to assess the criterion-related validity. The Cronbach alpha internal consistency coefficient was determined and the equivalent halves approach was employed for the reliability analysis. In addition, the item discrimination coefficient was calculated by calculating the difference between the upper and lower 27% score averages. The research data were collected online from two distinct groups of people aged 18-35. A three-factor structure with 21 items was obtained with 306 participants in the EFA stage and 365 participants in the CFA stage, for a total of 671 participants, according to the results of the EFA and CFA performed within the context of the research. The Cronbach alpha internal consistency coefficients calculated for the wholesale scale in the three-factor final structure were calculated as .90. The correlation value between the scores of the two halves of the form, which was divided into odd and even numbers in the equivalent halves method was examine a strong positive correlation was found between the two halves of the method of comparing the upper 27% and lower groups of 27%, which was applied to test the reliability of the measurement tool, it was revealed that the difference between the mean scores of the upper and lower 27% groups was significant. As a result, it can be stated that the Serenity Scale is a reliable and valid measurement tool.

Keywords: Serenity, Young adults, Validity, Reliability

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INTRODUCTION

Throughout the history of humanity, many researchers have worked and discussed about concepts and actions such as peace, feeling peaceful, reaching peace, happiness, well-being, and feeling good. These concepts and actions are frequently mentioned in daily life and are used interchangeably without realizing it. Despite the confusion of meaning in daily life, these concepts and actions mean different things. In the dictionary of the Turkish Language Institution (TDK), the concept of happiness is defined as “the state of being proud of achieving all aspirations completely and continuously” (TDK, 2022). For many people in the West, happiness is about feeling good; It expresses the dominance of positive emotion over negative affect, a general satisfaction or satisfaction with life. Happiness is subjective and consists of both emotional and cognitive evaluations of people's own lives (Argyle et al., 1989; Diener 1984). Looking at the concept of serenity; It is seen in the dictionary of TDK that it has meanings such as "rest, peace of mind, comfort, peace" (TDK, 2022). Serenity can be thought of as a personal and unique way of life that includes behavioral and cognitive elements associated with feeling calm and comfortable (Floody, 2014).

In the literature, it is seen that different definitions are made about the concept of serenity. While Bodley (1955) stated that serenity is a reflection of one's existence, Garvey (1977) compared serenity to a spiritual supermarket. Whitfield (1984) defined serenity as a higher level of consciousness and a spiritual concept. Pfau (1988) stated that serenity is an intact higher faculty of the soul and defined it as a state of serenity beyond all understanding. In addition to all of these, serenity, a spiritual condition that reduces stress and promotes optimal health (Roberts & Cunningham, 1990), a permanent inner peace that helps console clients going through difficult life events (Gerber, 1986), and a universal health experience connected to quality of life are all crucial (Kruse, 1999). However, according to Boyd-Wilson et al. (2004), serenity is a spiritual characteristic that encompasses inner peace despite ups and downs. They also said that serenity allows one to experience sadness while maintaining composure. Serenity is a spiritual concept. Clark et al. (1984) distinguished joy from serenity in terms of arousal level. Joy includes high arousal, while serenity includes low arousal. Unlike joy and contentment, serenity is not dependent on external events. It is sustained in good times as well as bad times (Gerber, 1986; Oates, 1979).

Roberts & Cunningham (1990), starting from the preliminary research and definitions, started to work on the concept analysis and measurement tool about serenity. In the study they conducted, they asked five experts for their opinions on the concept of serenity and defined ten attributes on which at least four of them agreed. The diagram of these attributes is given in Figure 1.

Figure 1. Attributes of the Concept of Serenity

The features in the diagram in Figure 1 showing the ten attributes of serenity form the basis of the theoretical definition of the concept of serenity. Information on these features is given below:

a) Ability to get away from desires, emotions or feelings: This ability allows you to stay away from negative emotions and feelings and stay peaceful. It means abandoning unrealistic expectations and not wanting things that won't happen.

b) Ability to stay connected with an inner world that includes calmness and security: Although the concept has different definitions, it is emphasized that one must be able to reach this shelter in order to attain serenity. Inner refuge is associated with nature, prayer, solitude and meditation. A peaceful individual is one who has developed the ability to reach this refuge.

c) Feeling of connectedness with the universe: Peaceful individuals feel the need to belong. They feel connected to something bigger than themselves. It could be the Creator, the universe, family, group, nature, animals, or a life purpose to which they feel attached. Even if these individuals are alone, they do not feel lonely.

d) Confidence in the wisdom of the universe: Reflects belief that events follow a larger plan, and confidence that even bad experiences, in some way, follow a larger plan. It reflects a person's belief in something beyond himself.

e) The habit of actively pursuing all reasonable ways to solve problems: These people actively engage in changing unfavorable life occurrences and accept responsibility for the events and emotions they may influence. Although they accept the events that they cannot change, they try all ways to solve the problem before this acceptance.

f) Ability to accept unchangeable situations: They accept events that are certain to develop beyond their control. They quit attempting to alter individuals and circumstances once they know that it will be ineffective.

g) The ability to give oneself unconditionally: One's capacity to demonstrate alturism or benevolence contributes to one's sense of serenity. Giving oneself is partly an expression of a sense of belonging. By giving, the serene person also expresses the need.

h) Being able to forgive oneself and others: A serene person has learned to forgive both himself and others, and they are at peace with their past.

i) The ability to put the past and future aside and live in the present: The peaceful person always lives in the "moment". Does not feel guilty about the past and does not worry about the future.

j) A sense of perspective on the importance of oneself and life events: Peaceful individuals have a healthy self-esteem, which includes a sense of humility. He also tends to have a sense of humor. The peaceful individual sees life with a long-range perspective. During this long marathon, he asks himself the following questions:

- How important is my experience in this long marathon?
- Will worrying make a difference?
- What are the important aspects of the problem?

According to Roberts & Cunningham (1990), serenity is a spiritual sense of inner calm, trust, and dedication that exists regardless of what happens outside of oneself. The concept of spirituality in this definition; It refers to a return to values, understanding, purpose in life, relationships, and lofty human traits such as honesty, love and spirit.

Roberts & Cunningham (1990) developed a 65-item scale to evaluate the concept of serenity, which was later reduced to 40 items by Roberts and Aspy (1993). Kruze et al. (2005) revisited the revised scale's psychometric properties. Kreitzer et al. (2009) added to the literature by developing a 22-item short version of the scale. While Demirci and Ekşi (2017) developed a measurement tool for the concept of "peace" in Turkey, this scale was developed using a different conceptual structure. Furthermore, because of the small number of items on the scale, it was thought to be limited in scope, and it was thought that a more comprehensive measurement tool for the concept might be required.

A "serenity"-focused scale with items appropriate for Turkish culture and Turkish language has not yet been developed in Turkey. In the present study the concept of serenity was handled in accordance with the conceptual framework developed by Roberts & Cunningham (1990), and 10 attributes in the conceptual framework were also included while writing Turkish items. Relevant items were submitted for expert review in terms of compatibility with Turkish language and culture. Furthermore, the measurement tool's target audience is young adults between the ages of 18 and 35, and it is anticipated that the scale will be used in other studies to be conducted on individuals in this age group. Besides it is believed that dealing with the concept of peace with different variables will contribute to the literature.

METHOD

Participants

Data were gathered from two distinct groups within the parameters of the study in order to conduct exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In addition, the data collected in order to test the criterion validity of the measurement tool were btained at the CFA stage. Details about gender, age and last graduation level of the participants in different parts of the scale development phase are given in Table 1.

Table 1. Demographic Information of Participants in Scale Development Stage

		EFA	CFA	Total (n)	%
Gender	Female	207	255	462	68.85%
	Male	99	110	209	31.15%
Age Statistics	Average Age	25.53	23.39	671	100%
	SD	5.49	3.6	671	100%
Graduation Level	Middle School	3	0	3	0.45%
	High school	109	175	284	42.32%
	AssociateDegree	14	10	24	3.58%
	Undergraduate	144	162	306	45.60%
	Master	34	15	49	7.30%
	Doctorate	2	3	5	0.75%

Upon looking at Table 1, it is seen that the total number of individuals who participated in the development of the Serenity Scale is 671. Of the participants, 462 (68.85%) were female and 209 (31.15%) were male. Considering the graduation levels of the participants, 3 of them are secondary school, 284 of them are high school, 24 of them are associate degree, 306 of them are undergraduate, 49 of them are graduate and 5 of them are doctorate.

306 individuals took part in the EFA phase of the study. While 207 (67.6%) of the participants were women, 99 (32.4%) were men; the mean age of this group was 25.56. In the CFA stage, 365 individuals took part. While 255 (69.9%) of the individuals participating in this stage were female and 110 (30.11%) were male, the mean age of the group was 23.39.

Data Collection Tools

The measurement package included a personal information. In addition, the Authentic Happiness Scale (Şanlı, Balcı Çelik, & Gençoğlu, 2019) and the Peace Scale (Demirci & Ekşi, 2017) were used to ensure criterion validity.

Personal Information Form: It was designed by the researchers to collect information about the participants' gender, age, last level of graduation and perceived socioeconomic level.

Authentic Happiness Scale: The scale was developed by Şanlı et al. (2019). The scale is five-point Likert type, contains 16 items and consists of two sub-dimensions. Scoring of the scale is done in two different dimensions, and a total score cannot be obtained from the overall scale. During the development of the scale, the Cronbach alpha internal consistency coefficient was calculated twice. This value, which was found to be .87 in the authentic happiness dimension and .88 in the fluctuating/unstable happiness dimension in the exploratory factor analysis (EFA) phase, was calculated as .84 and .87 in the confirmatory factor analysis (EFA) phase, respectively. The Cronbach alpha internal consistency coefficient was recalculated within the scope of this study and found to be .82 in the authentic happiness dimension and .88 in the fluctuating/unstable happiness dimension.

Peace Scale: The scale was developed by Demirci & Ekşi (2017). The scale has a one-dimensional structure and consists of eight items in a five-point Likert type. In the development study, the Cronbach alpha internal consistency coefficient was found to be .78. The Cronbach's alpha internal consistency coefficient was recalculated within the scope of this study and was found to be .85.

Data Collection

Permission was acquired from Ondokuz Mayıs University's Social and Human Sciences Research and Publication Ethics Committee for the form, which was created after receiving expert opinions and includes 30 items. After that, the scale form was made suitable for online data collection. At the beginning of the created form, the purpose of the research, ethical information and approval are given. The link of the form was shared online in order to reach individuals between the ages of 18-35 and it was requested to be filled by volunteers. Answering the measurement tool took an average of 6 minutes in the EFA stage and 9 minutes in the CFA stage.

Analysis of Data and Application

Content Validity: After the literature review, an item pool consisting of 66 expressions suitable for the attributes of the concept of peace was created. The expressions in the item pool were examined by the researchers, and the expressions containing similarities, incomprehensible in terms of expression and/or measuring two different situations at the same time were eliminated. After these procedures, 35 items remained in the measurement tool. The form with these items was presented to the opinion of two different Turkish language experts in order to evaluate it according to the criteria of being suitable for the Turkish language and being understandable in terms of the target audience. These views were evaluated and the parts that were found to be problematic in terms of expression were corrected. The final version of the form was sent to six lecturers and three lecturers from the field of guidance and psychological counseling via e-mail.

Davis technique was taken into account in the preparation of the scale form sent to the expert opinion and in the evaluation made after the relevant opinions were received. When using the Davis technique, experts evaluate the items and assign them one of four grades: (a) appropriate, (b) the item should be slightly revised, (c) the item should be reviewed seriously, and (d) the item not appropriate. By dividing the number of experts who selected options (a) and (b) by the total number of experts, this

technique calculates the content validity index (CVI) for the item. Items are eliminated if their CVI value is less than 0.8 because they are not deemed adequate in terms of their content validity (Davis, 1992).

After the analysis, it was determined that there were 28 items with a CVI value of 0.8 and above in the measurement tool. While there were items for which expressive correction was made in line with expert opinions even though the CVI value was above 0.8, the two items (items 24 and 29) with a CVI value below 0.8 were re-evaluated by the the researchers, taking into account the expert's opinions. It was decided that the items would be corrected in terms of expression and remain in the measurement tool. Information about the CVI values of the items in the measurement tool and the latest status of the item are given in Table 2.

Table 2. Table of Content Validity Index Values

Item No	Experts who marked a+b	Expert participant total	CVI	State of matter
1	7	9	.8	
2*	7	9	.8	Expression corrected
3*	7	9	.8	Expression corrected
4	9	9	1	
5	8	9	.9	
6	8	9	.9	
7*	8	9	.9	Expression corrected
8*	7	9	.8	Expression corrected
9	8	9	.9	
10*	7	9	.8	Expression corrected
11	9	9	1	
12	9	9	1	
13	9	9	1	
14*	7	9	.8	Expression corrected
15*	7	9	.8	Expression corrected
16	7	9	.8	
17*	7	9	.8	Expression corrected
18*	7	9	.8	Expression corrected
19*	9	9	1	Expression corrected
20*	7	9	.8	Expression corrected
21	7	9	.8	
22**	5	9	.6	Removed
23*	8	9	.9	Expression corrected
24*	6	9	.7	Expression corrected
25	9	9	1	
26*	7	9	.8	Expression corrected
27**	6	9	.7	Removed
28	7	9	.8	
29*	6	9	.7	Expression corrected
30**	6	9	.7	Removed
31**	5	9	.6	Removed
32	9	9	1	Expression corrected
33	9	9	1	Expression corrected
34**	6	9	.7	Removed
35*	7	9	.8	Expression corrected

* Expressive corrections in line with expert opinions

** Items extracted as a result of the evaluation of content validity and expert opinions

When the Table 2 is analysed, it is seen that 12 items in the measurement tool remained the same, 18 items were made expressive corrections, and 5 items were removed from the measurement tool by taking into account the CVI values and expert opinions. After all these evaluations and procedures, a total of 30 items remained in the measurement tool.

Construct Validity: At this stage of the study, the Kaiser-Meyer-Olkin (KMO) coefficient and the Barlett Sphericity Test were used to assess the data's appropriateness for factor analysis. EFA was used to determine the construct validity of the scale using principal component analysis with promax

rotation. Exploratory factor analysis was carried out in line with the responses from a total of 306 participants. In order to evaluate the construct validity of this model, which emerged after EFA, confirmatory factor analysis (CFA) was performed with data obtained from a group of different participants. Confirmatory factor analysis was carried out in line with the responses from a total of 365 participants.

RESULTS

Exploratory Factor Analysis: The scale's construct validity and factor structure were determined using exploratory factor analysis (EFA). This was accomplished through the use of principal component analysis and promax rotation algorithms. The Kaiser-Meyer-Olkin (KMO) sample adequacy value was determined to be 0.908 as a result of the study, indicating that the sample size was adequate for EFA. This value is considered sufficient when it is above 0.50 by Field (2009: 647), and values of 0.90 and above are classified in the "excellent" category. In addition, as a result of the Barlett Test $x2(210)= 2670.662$; $p<0.05$ and this finding showed that the correlations between the items were large enough for EFA. Table 3 summarizes the Serenity Scale factor analysis findings.

Table 3. Serenity Scale Factor Analysis Findings

Materials	Factor 1	Factor 2	Factor 3
Item 6	0.786		
Item 11	0.784		
Item 12	0.781		
Item 13	0.759		
Item 14	0.415		
Item 16	0.789		
Item 24	0.561		
Item 26	0.561		
Item 28	0.430		
Item 30	0.490		
Item 3		0.760	
Item 15		0.616	
Item 18		0.757	
Item 19		0.703	
Item 22		0.553	
Item 23		0.735	
Item 27		0.544	
Item 7			0.793
Item 8			0.780
Item 9			0.624
Item10			0.885
Self Value	7.384	2.073	1.444
Variance Explained	35.164	9.872	6.878
Total Variance Explained	51.915		

The EFA revealed that the Serenity Scale contained 21 items, had a three-factor structure, and these three factors explained 51.91% of the total variation. As a result, it was determined that Serenity Scale demonstrated a valid feature. Furthermore, the first sub-dimension explains 35.16% of the variance, the second sub-dimension explains 9.87%, and the third sub-dimension explains 6.88% of the variance.

Table 3 shows that the first sub-dimension has ten items, the second sub-dimension has seven items, and the third sub-dimension has four items. When factor loading data are evaluated, it is discovered that this value is. 40 or above in all items. These values are accepted as ideal (Field, 2009: 666) and it has been evaluated that the items contribute significantly to the factors. In addition, the sub-dimensions were named as satisfaction, self-discipline and benevolence, respectively.

Confirmatory Factor Analysis: Confirmatory factor analysis was used to examine the model fit of the Serenity Scale's three-component structure acquired through exploratory factor analysis. It

has been understood that the x^2/df value and the RMSEA value revealed in the path analysis obtained as a result of the CFA are above what they should be. Following the analysis, a modification process was made between the items M7 and M17, M10 and M12, and M20 and M21 in line with the recommendations of the program, and it was observed that the model gave a good fit after these processes (Figure 2).

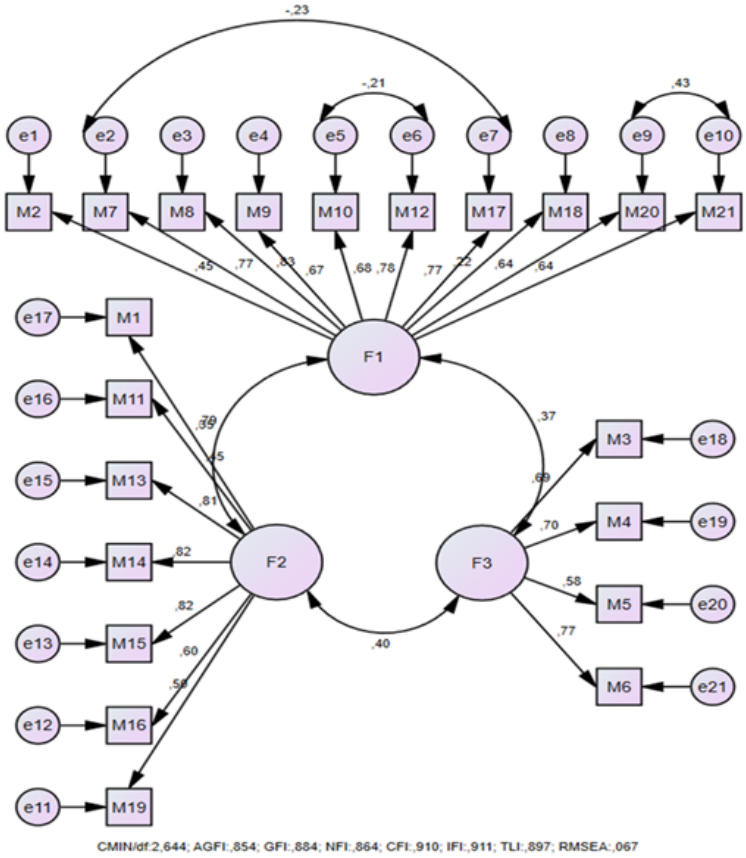

Figure 2. Post-Modification CFA Results

The fit index values and reference values obtained in the repeated CFA after the modification are given in Table 4.

Table 4. Model Fit Indices

indexes	Value	Acceptable values
x2/df	2.64	**≤3** (Kline 2005)
GFI	.88	**≥.85** (Jöreskog & Sörbom 1988)
RMSEA	.07	**≤.08** (Browne & Cudeck 1993; Hair et al., 2006; Steiger, 1989)
NFI	.86	**≥.80** (Bentler & Bonett 1980; Marsh et al., 1988)
CFI	.91	**≥.90** (Bentler, 1990; Bentler & Bonett 1980; Vidaman & Thompson, 2003)
IFI	.91	**≥.90** (Bollen, 1989)
PNFI	.75	**>.50** (Mualik et al., 1989)
PGFI	.70	**>.60** (Byrne, 2010)

*All acceptable values are shown in bold

In line with the findings obtained from the CFA performed as a result of the modification process, it can be said that the model fit of the Serenity Scale is at a sufficient level.

Criterion-Related Validity: To examine the Serenity Scale's criterion-related validity, its link with the Authentic Happiness Scale and the Peace Scale was investigated. Since the total score could not be obtained in the Authentic Happiness Scale, the correlation with the dimensions of authentic

happiness and fluctuating/unstable happiness was considered. The results obtained are given in Table 5.

Table 5. Findings Related to Similar Scale Validity of Serenity Scale

Scale/Dimension	1	2	3	4
(1) Serenity Scale	1	.80	-.48	.74
(2) AHS (Authentic Happiness)*		1	-.44	.72
(3) AHS (Unstable Happiness)*			1	-.63
(4) Peace Scale				1

Upon looking at table 5, ıt is seen that Serenity Scale has a strong positive (r= .80) correlation with the authentic happiness sub-dimension, moderately negative (r= .-48) correlation with the unstable happiness sub-dimension, and a strong positive (r= .74) correlation with the Peace Scale. In line with the findings obtained, it can be said that the criterion validity of the Serenity Scale has been achieved.

Reliability: First, Cronbach Alpha reliability analysis was performed to determine the reliability of the Serenity Scale. Information regarding this analysis is given in Table 6.

Table 6. Reliability Analysis Results of Serenity Scale

Dimensions	Number of Items	EFA Cronbach Alpha Values	CFA Cronbach Alpha Values
Serenity Scale (Total)	21	.90	.91
Factor 01 (Satisfaction)	10	.87	.87
Factor 02 (Self Discipline)	7	.80	.82
Factor 03 (Benevolence)	4	.80	.77

When Table 6 is examined, the reliability of the scale at the EFA stage was α=.90, the reliability of the satisfaction sub-dimension α= .87; reliability of the self-discipline sub-dimension α= .80; While the reliability of the benevolence sub-dimension was found as α= .80, the reliability of the scale was found as α=.91 in the CFA phase. In addition, the reliability of the satisfaction sub-dimension was α= .87; reliability of the self-discipline sub-dimension α= .82; The reliability of the benevolence sub-dimension was determined as α= .77. As a result, it was agreed that the Serenity Scale, including the sub-dimensions, is a reliable measurement tool based on data obtained in both the EFA and CFA stages. Because a Cronbach Alpha value of .70 and above is considered sufficient for the reliability of a measurement tool (Büyüköztürk, 2011: 171).

Equivalent halves (two halves) method was also used to test the reliability of the measurement tool. The 21 items in the scale were divided into two groups as odd item numbers and even item numbers, and were included in the analysis. As a result of the analysis, it was determined that the Cronbach Alpha value of 11 items in the first half was α=.84, and the Cronbach Alpha value of 10 items in the second half was .80. While the correlation value between forms was found as .87, the Gutmann Split Half correlation value was found as .93.

The final analysis applied to test the reliability of the measurement tool was the method of comparing 27% upper and 27% lower groups. It is expected that the mean scores obtained from the scale will differ between these two groups, and the responses of the upper and lower groups to the items should be different from each other (Büyüköztürk, 2007). According to the total score of the scale, the scores of the 27% group at the top and the 27% group at the bottom were analyzed with the independent samples t-test, and the difference between the scores of these groups was found to be significant. Independent samples t test results comparing the scores of the upper 27% and lower 27% groups are given in Table 7.

Table 7. Difference Test Results of Upper and Lower 27% Groups

Groups	N	$\bar{X}$	S	d	t	p
Top 27% Total	98	95.06	,4.03	194	35.42	.000
Bottom 27% Total	98	65.13	,7.33			

When Table 7 is examined, the difference between the mean score of the 27% upper group ($\bar{X}_{upper27\%}$= 95.06) and the subgroup score of 27% ($\bar{X}_{lower\ 27\%}$= 65.13) is significant (t (194) = 35.42, p< 0.05).

DISCUSSION

The Serenity Scale was developed in this study, and its construct validity was investigated using exploratory factor analysis and confirmatory component analysis. In order to test the criterion-related validity, the relationship between Serenity Scale's Peace Scale and Authentic Happiness Scale was examined. For the reliability analysis, the Cronbach alpha internal consistency coefficient and the equivalent halves technique were used. In addition, the item discrimination coefficient was calculated by calculating the difference between the upper and lower 27% score averages.

The exploratory factor analysis revealed that the measuring instrument contained 21 items, a three-component structure, and these three factors explained 51.91% of the total variance. Item factor load values were found to be .40 and above in all items. These values are accepted as ideal (Field, 2009: 666) and it has been evaluated that the items contribute significantly to the factors. The three-factor structure, which was reached as a result of the exploratory factor analysis, was discussed in the confirmatory factor analysis with the data obtained from a different research group. As a result of CFA, acceptable goodness of fit values were obtained (Bentler, 1990; Bentler & Bonett, 1980; Bollen, 1989; Brown, 2006; Marsh et al., 1988). Obtained findings show that the structure of Serenity Scales, which consists of three factors, has been confirmed. In the correlation analysis conducted within the scope of concordance validity, it is seen that Serenity Scale has a strong positive correlation with the authentic happiness sub-dimension, a moderately negative correlation with the unstable happiness sub-dimension, and a strong positive correlation with the Peace Scale.

It is understood that the Cronbach alpha values obtained as a result of the reliability analyzes are over .70 and have high reliability (Nunnaly & Bernstein, 1994). In the equivalent halves method, the items were divided into odd and even numbers, and the correlation value between the scores of the two halves was examined. A strong positive correlation was found between the two halves. In the method of comparing the 27% upper and 27% lower groups, which was applied to test the reliability of the measurement tool, it was revealed that the difference between the mean scores of the upper and lower 27% group was significant.

The Serenity Scale consists of 21 items in 5-point Likert type grouped under three factors. Agreeing with each item is graded as strongly agree (5), agree (4), undecided (3), disagree (2), and strongly disagree (1). The scale yields a result with a minimum of 21 and a maximum of 105 points. 2 items (Item 2 and Item 18) in the scale are reverse scored. The remaining items contribute positively to the score.

The concept of serenity in Turkey has been discussed in a limited number of studies and in a different theoretical background (Demirci & Ekşi, 2017; Öksüz & Karalar, 2019; Şimşir, 2020). As a result of reviewing the literature and examining serenity on a different theoretical basis, it was thought that a more qualified and inclusive measurement tool might be needed for this concept. In this context, a measurement tool suitable for Turkish language and Turkish culture was developed in accordance with the conceptual framework put forward by Roberts and Aspy (1990). The target audience of the scale is young adults between the ages of 18-35, and it is anticipated that the scale can be used in other studies to be conducted on individuals in this age range. It is thought that considering the concept of peace with different variables will contribute to the literature.

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Candidate Primary School Teachers' and Primary School Teachers' Metaphorical Perceptions about Teaching and Mathematics Teaching

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Abstract

The primary goal of this study is to identify the metaphors primary school teachers and candidate teachers use to describe teaching and mathematics teaching. The second goal is to highlight the parallels and discrepancies between metaphoric themes related to teaching and those related to mathematics teaching. A study in phenomenological design—one of the qualitative research methods—was conducted with this goal in mind. The study involved 121 primary school instructors and 84 undergraduate primary school teaching students. The researcher's own questionnaire form was used to electronically gather the data. After conducting a content analysis of the data, themes were developed. Four (4) themes for candidate teachers and six (6) themes for teachers were created from the metaphors provided for the concept of teaching. Six (6) themes for instructors and four (4) topics for potential teachers were created from metaphors about mathematics teaching. It is believed that certain teaching metaphors and metaphors for mathematics teaching are influenced by prior knowledge, some by teaching material, and some by experience. The fact that the teachers—as opposed to the candidate teachers—created metaphors about mathematics teaching around the themes of "A Field of Instruction with Rich Solutions" and "A Field that Requires Variety in Teaching Methods and Techniques"—suggests that teachers' opinions on the subject evolve as they gain more practical knowledge. It is advised that prospective primary school teachers be offered training in related courses to help them form views about teaching and mathematics teaching in light of the research's findings.

Keywords: Teaching; Mathematics Teaching; Teacher Training; Primary School Teaching; Perceptions of Teaching and Mathematics Teaching

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INTRODUCTION

Arithmetic, which deals with numbers and rules for dealing with them, and geometry, which deals with problems of surface and surface measurement, have long been associated with mathematics as the science of quantities and space (Davis & Hersh, 1980). In truth, algebra, arithmetic, and problem-solving are all parts of mathematics (Bruning, Schaw, & Norby, 2014). The environment and practical information obtained in other study areas are covered in mathematics instruction today (Schunk, 2009). Based on their prior knowledge of mathematics from their undergraduate education, teachers who will teach mathematics are prepared with specialized teaching topic knowledge. The teaching and learning course serves as the foundation for the mathematics teaching course as well. In the literature, it is thought that teachers and candidate teachers have a mental schema for mathematics teaching and teaching concepts. In this article, the meanings that teachers and candidate teachers attribute to the concepts of mathematics teaching and learning were tried to be determined with the metaphors they produced.

Mathematics Teaching and Teacher Training

Mathematics teaching is a course in which children acquire mathematical knowledge and skills. Specialization in mathematics occurs through children's acquisition of conceptual and methodological knowledge and skills (Rittle-Johnson & Star, 2009). Therefore, in studies where the basic issues of learning are associated with the mathematics learning domain, the development of mathematical skills in children, the use of teaching strategies, cognitive-affective factors affecting mathematics learning, etc. have been focused on (cf. Desoete, Ceulemans, De Weerdt, & Pieters, 2010; Landerl & Kölle, 2009; Siegler, Robinson 1982; Vanbinst, Ceulemans, Peters, Ghesquière, & De Smedt, 2018; Vanbinst, Ghesquière, & De Smedt, 2015). Research shows that children's numerical processing skills develop before their arithmetic skills (Barteler, Vaessen, Blomert, & Ansari, 2014; Vanbinst, Ghesquière, & De Smedt, 2015). It is a well-known fact that teachers need to have the pedagogical content knowledge to develop children's mathematical knowledge and skills correctly and effectively. Pedagogical content knowledge is teacher-specific knowledge and the combination of teachers' subject matter knowledge and pedagogical knowledge includes pedagogical content knowledge (Cochran, DeRuiter, & King, 1993). It has been stated that teachers' mathematical knowledge and pedagogical content knowledge are vital for effective mathematics teaching and children's learning (Walshaw & Anthony, 2007). This issue is related to the field of teacher education.

In Turkey, primary school teachers teach children mathematics lessons for four years of primary school. These teachers graduate from universities by taking mathematics-related teaching courses in the undergraduate programs of primary teaching in faculties of education. *When the content of the mathematics teaching course of the programs that train primary school teachers in Turkey is examined, it is seen that mathematics as a historical process, special teaching methods and techniques, learning and teaching theories, and its place in mathematics teaching as a special teaching field, problem-solving, information technologies, number concept and its development in children, mathematics curriculum, mathematics subjects, development and teaching of concepts such as geometry-measurement-number-time, etc. in children, measurement and evaluation of success, learning misconceptions* (YOK, 2019). Therefore, to be able to teach mathematics, candidate teachers should have knowledge and skills in the mathematics special field, learning-teaching content knowledge, curriculum, and development of numerical processing skills in children.

In reality, mathematics teaching is a complex task involving many factors and is envisioned as a course of reflection and cognitive operations (Bruning, Schraw, & Norby, 2014). Candidate elementary teachers bring to their professional work some prior content knowledge about teaching and learning mathematics, pedagogical experiences, and experiential thinking embedded in their epistemological orientations (Wilcox, Schram, Lappan, & Lanıer, 1991). Candidate teachers have some deep-rooted beliefs about mathematics teaching and learning before they start taking a mathematics teaching course; they may also acquire new ways of thinking about teaching and learning through a mathematics teaching course (Ball, 1990; Wilcox et al., 1991). It is thought that

metaphorical discourses used in mathematics courses can also affect students' epistemological beliefs about mathematics (Olsen, Lew, & Weber, 2020). It can be expected that primary school teachers' perceptions about teaching and mathematics teaching will be shaped by their undergraduate education and professional experience. Positive perceptions may be reflected in teachers' attitudes toward mathematics teaching (Tarım, Özsezer, & Canbazoğlu, 2017).

Teaching

One of the pedagogical concepts necessary for mathematics teaching is the concept of teaching. Because mathematics teaching practices in the classroom affect students' learning (Hiebert & Grouws, 2007). The concept of teaching refers to the process of attending to people's needs, experiences, emotions, and intervening to help them learn certain things and go beyond what is given. The importance of teaching stems from the fact that how a teacher understands it affects his/her actions in the classroom (Hirst, 1971). Although candidate teachers are provided with field-based training during their university education, they may have concerns about transferring theories into practice (Harding & Hbaci, 2015). It has also been determined that candidate teachers have strong beliefs about learning and teaching that can be an obstacle to teaching and that teaching interventions can change the beliefs of candidate teachers, especially those who are prejudiced against teaching (Joram & Gabriele, 1998). Similarly, many actions of teachers in the classroom are the result of many components such as content knowledge, teaching practices, beliefs, and experiences (O'Sullivan, MacPhail, & Tannehill 2009). From the perspective of social interaction theory, teaching can be defined as the professionalization of a beginning teacher through the process of interpreting what he/she has acquired through his/her undergraduate education and teaching experience (Shaw & Mahlıos, 2008). The teaching beliefs of candidate teachers and teachers can be expected to be shaped in the light of their background knowledge, the courses they take in university education, the teaching strategy knowledge they acquire in teaching courses, and the experiences they gain when they become teachers. One of the ways to understand this change may be to check the metaphors of candidate teachers and teachers about the subject.

Related Literature

When the studies in the literature are investigated, it is understood that the perceptions of candidate mathematics and primary school teachers about learning, mathematics, problem-solving, algebra, etc. are determined through metaphors. For example, candidate teachers' metaphors of the concept of mathematics (Güveli, İpek, Atasoy, & Güveli, 2011) and their perceptions of the concept of mathematics and mathematics teaching (Tarim, Özsezer, & Canbazoğlu, 2017) are the subjects that have been studied. For candidate teachers, mathematics course metaphors (Güner, 2013), attitudes, and metaphors towards the concept of mathematics (Kuzu, Kuzu, & Sıvacı, 2018) have also been studied. For example, Tarım et al. (2017) determined that mathematics teaching metaphors of classroom teaching candidates were gathered in five themes: *indispensability, infrastructure/resource, motion, labor/effort, and desire/emotion*. In a study in which mathematics teacher candidates who received pedagogical formation certificate training participated, it was determined that half of the participants had a negative perception of teacher training (Sener, Bulut &Unal, 2017). The results of a study conducted by Sahın (2013) showed that pre-service science and classroom education teachers produced more positive metaphors for mathematics. Pre-service teachers studying in social fields, on the other hand, associated the concept of mathematics with the metaphors of difficulty and necessity.

In a study, it was determined that the majority of teachers saw *teaching and learning* as knowledge transfer, a small group as constructivist, and a smaller group as a social process (Martinez, Sauleda, & Huber, 2001). Ural, Aydemir, Toker-Gökçe, and Öztoprak-Kavak (2016), in a study investigating the perceptions of secondary school students and teachers towards teaching and their metaphorical perceptions of teaching, found that teachers' metaphors about teaching were gathered under the themes of *discovering the gem, futile work, effort and endeavor, and a fun job*. According to the results of the same study, students' metaphors about the concept of teaching are similar to those of their teachers.

For the concept of teaching, there are metaphor studies with secondary school students, teachers and teacher candidates (see. Çetinkaya and Eskici, 2018; Martinez, Sauleda, & Huber, 2001; Sadi, 2014; Ural, Aydemir, Toker-Gökçe, and Öztoprak-Kavak, 2016). In some of these studies, it has been determined that both teacher candidates and most of the teachers have produced metaphors that see teaching as a knowledge transfer process (see. Çetinkaya and Eskici, 2018; Martinez et al., 2001). In addition, it was also observed that candidate teachers' teaching metaphors and teaching metaphors differed to a great extent, their beliefs on these issues were diverse, and in some prominent themes, these metaphors could be handled together (Martinez et al., 2001. Eren and Tekinarslan (2013), one study, it was concluded that the concepts of teaching and teaching material, learning, and evaluation were also related. For this reason, they stated that it was natural that the metaphors produced by candidate teachers for these four concepts were also related to each other. In a study by Shaw and Mahlıos (2008), it was concluded that teacher candidates' teaching metaphor themes could be compared with dominant literacy themes, and that teaching and literacy themes varied.

Current Study

Metaphors are not only language tools but also basic cognitive tools that enable people to make sense of the world around them and are used to associate abstract ideas with concrete experiences (Godor, 2019; Wegner, Burkhart, Weinhuber, & Nuckles, 2020). It is possible to learn people's perceptions about concepts, knowledge, skills, actions, etc. through metaphors. Therefore, research has focused on metaphors to reveal the meanings that candidate teachers' or teachers' attribute to various concepts. At the same time, the metaphors produced also contain information about people's beliefs. While implicit beliefs in learning and teaching can be identified through metaphors, these beliefs may differ according to being a student or a teacher and the level of education served or studied (Saban, Nazlı, Koçbeker, Saban, 2007). As a matter of fact, Tarım, Özsezer, and Canbazoğlu (2017) determined that there is a lot of research on mathematics in the literature, but studies on mathematics teaching are more limited and suggested that research on metaphors, perceptions, etc. for teachers and candidates should be included more.

As explained in the conceptual framework given above, one of the fields related to mathematics teaching is the field of learning-teaching. For this reason, addressing teaching and mathematics teaching metaphors together will enable a more comprehensive explanation of the subject. There is a need to know how candidate teachers and teachers perceive and define mathematics teaching and mathematics teaching. To the best of our knowledge, metaphorical studies dealing with the concepts of teaching and mathematics teaching together are limited in the literature. Only one study was found in the literature that associated teaching with a specific content area (primary literacy teaching) (Shaw & Mahlıos, 2008). In line with the conceptual framework explained above, in this study, it was determined that the pre-service teachers and teachers' metaphors of teaching and mathematics teaching were not investigated together as a problem situation. For this reason, the first aim of this study is to determine the metaphors of candidate and primary school teachers towards the concepts of teaching and mathematics teaching. The second purpose is to determine the perceptual differences/similarities between the themes of teaching and mathematics teaching metaphors. In line with the aforementioned purpose, in the research, *"1. What are the teaching and mathematics teaching metaphors of candidate and primary school teachers? 1.a. What are the teaching metaphors of candidate? 1.b. What are the teaching metaphors of primary school teachers? 1.c. What are the mathematics teaching metaphors of candidate? 1.d. What are the mathematics teaching metaphors of primary school teachers? 2. Are the metaphor themes of candidate and primary school teachers' metaphors of teaching and mathematics teaching similar?"* questions were tried to be answered.

Determining the metaphors of teachers and candidate teachers about teaching and mathematics teaching is important for several reasons. First, mathematics teaching is built on the concept of teaching as in all teaching fields. In this way, it will be possible to understand how teaching in general and mathematics, in particular, are associated with the specific subject of teaching. Secondly, by examining both concepts and the metaphors of candidate and primary school teachers together, detailed information about the perceptions of the concepts before and after service will be obtained.

By comparing teachers and candidate teachers, it will be determined whether teacher education and professional experience change the conceptual framework for teaching and mathematics teaching. Thirdly, by determining this conceptual framework, some conclusions can be reached about both candidate and primary school teacher training for mathematics teaching. Finally, by associating mathematics teaching metaphors with mathematics course content and determining whether the metaphors produced reflect content knowledge, the efficiency of mathematics teaching courses will be mapped.

METHOD

Study Model

The phenomenology design, one of the qualitative research approaches, was used in this study to ascertain the metaphorical perspectives of primary school teacher candidates and primary school teachers regarding teaching and mathematics teaching. A qualitative research method known as "phenomenology design" is used to describe how people perceive a phenomenon. It helps to disclose people's viewpoints, experiences, and perceptions of a phenomenon, event, or concept (Rose, Beeby, & Parker, 1995). How prospective elementary school teachers and current elementary school teachers view teaching and mathematics instruction is the phenomenon that this study addresses.

Study Group

The study group for this research was chosen using the convenience sampling approach. The research was carried out with classroom teachers and teacher candidates. Teacher participants work in various cities of Turkey. Student participants are students studying in the classroom teaching department of a university. The non-random sampling method known as convenience sampling saves the researcher time and money (Birks & Malhotra, 2006). 84 prospective teachers and 121 current teachers participated in this study. The study's participants were assigned the codes A1, A2,....A; T1, T2,..... based on ethical criteria. Direct quotes from the participants were also cited in conjunction with these codes. Table 1 lists the demographic details of the study group's participants.

Table 1. Demographic Information of the Candidate Primary School Teachers and Primary School Teachers in the Study Group

Primary School Teacher			Total	Candidate Primary School Teacher			Total
Gender	Female	93	121	Gender	Female	65	84
	Male	28			Male	19	

As seen in Table 1, 121 of the research participants were teachers and 84 were candidate primary school teachers. Of the teacher participants, 93 were female and 28 were male. On the other hand, 65 of the candidate teachers were female and 19 were male.

Data Collection Tool

The data of this study were collected in an electronic form created by the researcher. In the first part of the form, demographic information of the participants such as age, seniority, and grade level, and in the second part of the form, to determine the teaching and mathematics teaching metaphors of candidate elementary school teachers and elementary school teachers, *"Teaching is like ..... Because....."* and *"Mathematics teaching is like ..... Because....."* expression structures were included.

Data Collection

The "Form of Primary School Primary school teachers' and Candidate Primary school teachers' Metaphors for the Concepts of Teaching and Mathematics Teaching" prepared by the researcher via Google, which includes the purpose of the research, voluntary consent for participation

in the research, and demographic data of the participants, was used to collect the data for this study. The study's participants received electronic versions of the forms outlining the study's objectives, requesting their consent to participate in the study, and collecting demographic data. The metaphors that teachers and candidates for the position of teachers created and electronically wrote, along with the justifications for these metaphors, were transformed into a Word document. The tabular data produced a 22-page written report.

Data Analysis

The research data were analyzed by content analysis method. In content analysis, concepts are classified and the subject is described with more abstract and general themes (Merriam & Grenier, 2019). The metaphors of teaching and mathematics teaching produced by the candidate primary school teacher and primary school teacher participants, the reasons for the metaphors, and the meanings they express were examined in depth and detail and coded. Each code obtained was analyzed and theme-determination processes were carried out. The reasons for the metaphors were examined and the appropriate themes were determined. Teaching metaphors were divided into four (4) themes for candidate primary school teachers. For the primary school teachers, it was classified in six (6) themes.

Mathematics teaching metaphors were divided into four (4) themes for candidate primary school teachers. For the primary school teachers, it was classified in six (6) themes. The statements of candidate teachers and teachers with different perspectives on the concepts of teaching and mathematics teaching were grouped under different themes, and examples of these statements are given as direct quotations in the findings section. For similar metaphors such as light and candle, the written explanations of the metaphors were carefully examined and analyzed in depth. According to their explanations, such similar metaphors were included in different themes. In this way, the reliability of the research was tried to be increased. In addition, the metaphor themes of teaching and mathematics teaching were compared and it was determined whether they were similar or different. In addition, the author of the study received coding support from a field expert researcher. The metaphors of teaching and mathematics teaching of candidate teachers and teachers were distributed to the themes independently by the author of this study and a field expert and the analysis was conducted again. At the end of these two analyses, the agreement between the researchers was evaluated with the formula *"Reliability = Agreement/(Agreement + Disagreement)"* created by Miles and Huberman (1994), and the percentage of agreement between the researchers was found (87%). Since the percentage of agreement obtained is above the critical value of 70% (Miles & Huberman, 1994), it can be said that the interrater agreement is sufficient and the findings obtained are reliable.

Ethics Committee

The study was applied to the University Social and Human Sciences Ethics Committee and the necessary ethics committee approval was obtained with the date 08.07.2021 and number E-61923333-050.99-43087.

FINDINGS

In this part of the study, the metaphorical perceptions of candidate primary school teachers about teaching are tabulated and presented. Within the scope of the research's first question, the teacher candidates' teaching metaphors were examined first.

Table 2. Candidate Primary School Teachers' Metaphors of the Concept of "Teaching"

Theme	Metaphors(f)	Frequency
Developing, Useful, Infinite Knowledge Process	Light(3), planting seeds in open soil(1), irrigation(5), family(1), water(1), sun(6), road(1), plane tree(1), growing trees(1), diamond(1), shaping the soil(1), ocean(1), turning big gears(1), making flowers bloom(1), touching human life(1), building construction(1), breathing(1), planting seeds(2), lighthouse(1), flower garden(1), to illuminate(1), to light a torch(1), to candle(4), to puzzle(1), to seed(1), to shed light(1), to universe(1), to map(1), to grow a sapling(1), to compass(2), to weave a carpet(1), to live(1), to book(1), to plant a sapling(1), to paint on canvas(1), to stars(1), to seed(1), to light(3), to sky(1), to keep alive(1)	57
Mutual Impact Process	Student(1), shopping(1), learning(1), sculpting(1),	4
Process of Discovering Talents-Individual Differences	Pulling the thick blanket over the pupil (1), pomegranate (1), every grain of sand on the beach (1), painting (1),	4
Teacher Qualification (A Process Requiring Love, Effort, and Labor)	To love (2), to construct a building (1), to guide (1), to motherhood (1), to blow up a balloon (1), to strive within certain limits and possibilities (1), to grow plants (1), to grow flowers (3), a flower in a pot (1), to weave a carpet (1),	13

Out of 84 metaphors produced by candidate teachers for the concept of "teaching", 78 of them were considered valid. Table 2 shows the metaphors that candidate teachers created for the concept of teaching. When Table 2 is examined, it is understood that the metaphors produced by candidate teachers for the concept of "teaching" are grouped under four (4) themes: "Developing, Useful, Infinite Knowledge Process" (f=57), "Mutual Impact Process" (f=4), "Process of Discovering Talents-Individual Differences"(f=4) and "Teacher Quality (A Process Requiring Love, Effort, and Labor)"(f=13). According to the frequency values of the themes, candidate teachers produced teaching metaphors mostly for the themes of "Developing, Useful, Accumulative, Infinite Knowledge Acquisition Process" and "Teacher Quality (A Process Requiring Love, Effort, and Labor)". Excerpts of the metaphors produced by candidate teachers for the concept of "teaching" are given below.

Developing, Useful, Infinite Knowledge Process

to keep alive Metaphor: "Because life as a whole is a learning process" (C81)

Mutual Impact Process

Sculpting Theme: "if we think of the student (primary school) as an unformed sculpture, as we learn something, behaviors, and knowledge begin to form and take shape, while the teacher learns the subtleties of sculpture, and the student-teacher works interactively" (C75).

The Process of Discovering Talents-Individual Differences

The metaphor of pulling the thick veil over the student: "Children already have all kinds of knowledge and the potential to put it into practice. The only thing that teachers need to do is to reveal their potential and make them realize that real life is beyond the veil - beyond the school walls" (C12)

Teacher Qualification (A Process Requiring Love, Effort, and Labor)

Production Metaphor: "It requires labor, patience, energy" (C79)

The metaphor of Weaving a Carpet: "Teaching requires patience like weaving a carpet, and a carpet that is started to be woven cannot be left unfinished, that is, teaching needs to be completed properly, not left unfinished. This depends on the characteristics of the teacher." (C17)

Within the scope of the research's first question, the teachers' teaching metaphors were examined secondly. The 121 metaphors produced by primary school teachers for the concept of

"teaching" were analyzed and themes were determined for 113 metaphors that were found to be valid. The metaphors produced by teachers for the concept of "teaching" are given in Table 3.

Table 3. Primary school teachers' Metaphors of the Concept of "Teaching"

Theme	Metaphors (f)	Frequency
Teacher Qualification	Water 1), cooking, seed (1), cook(1),seed(f=1), building(1), field, writing on paper(1), cooking(1), soil-water-sun that gives life to seedlings(1), integrating,(1), building(1), planting seeds(1)	11
Mutual Interaction Process	to learning(1), flower opening in the mind(1), being a student(1), life(1), child(1), explorers' journey(1), learning(1)	7
An Emotionally Rich, Productive Action	Love(3), candy(1), joy(1), exhaustion(1), hope(1), chocolate(1)	8
Process of Discovering Talents-Individual Differences	Milky Way(1), opening locked doors(1), finding the gems in children(1), swimming, rainbows(1), pottery making(1), opening new paths in the minds of others(1), ebru(1)	8
A Necessary-Cumulative Process	Puzzle(6), growing flowers(7), success(2), growing seedlings(9), birth(5), non-fabricated crops(1), white snow(1), sowing seeds(1), saturation(1), mountain peak(5), uphill(1)	39
The Job of Providing Useful Information and Guidance to People	Candle(4), illumination(3), oil lamp(1), river(1), light(5), candle,sunlight(1), sea(1), rain(1), sunlight(1), diamond(1), pottery(1), lantern(1), scientific discovery(1), treasure box(1), light scattering, reflection(1), light scattering(1), lighting ahead(1), tree(1), tea(1), space(1), generating, breathing(1), saving lives(1), conducting(1), balloon inflation(1), guide(1), writing on a blank blackboard(1), drawing a Picture(1), touching(1), brightness(1)	40

As can be seen in Table 3, the metaphors produced by candidate teachers for the concept of "teaching" were collected under the themes of *"Teacher's Quality (f=11)", " Mutual Impact Process (f=7)", "An Emotionally Rich, Productive Action (f=8)", "A Process of Discovering Talents-Individual Differences (f=8)", "A Necessary-Cumulative Process (f=39)", " The Job of Providing Useful Information and Guidance to People (f=40)".* Primary school teachers produced metaphors for the concept of "Teaching" mostly in the themes of " Providing useful information and guidance to people (f=40)" and "An Important-Necessary-Cumulative Process (f=39)". It can be said that teachers tend to see teaching as an important, necessary, and cumulative process of giving useful information and guidance to people. Examples of metaphor quotations for the concept of "Teaching" produced by teachers are given below:

Teacher's Qualification

The metaphor of writing on paper: "The students get what you give them. The teacher should know so that he/she can teach" (T37).

Mutual Impact Process

The Explorers' Journey Metaphor: "It allows discovering new aspects of information that is thought to be previously learned and understood. When teaching something to someone, it allows the information taught to be better learned by the teacher and to have details that they could not discover, if any." (T97)

An Emotionally Rich, Productive Action

Love "If the teacher loves the process, he/she embraces it, the more he/she teaches, the more he/she wants to teach, and he/she enjoys his/her work." (T67)

Process of Discovering Talents, Individual Differences

Marbling: "Each color represents a child" (T106).

A Necessary-Cumulative Process

Construction Metaphor: "Knowledge is taught over a period of time and added one on top of the other". (T27).

Mountain Peak metaphor: "You experience difficulties to teach, you start from the bottom, but in the end, you reach the summit with success. You are rewarded for your efforts". (T84).

The Job of Providing Useful Information and Guidance to People

Lantern Metaphor: "You show the way". (T47)

Within the scope of the first question of the research, the metaphors of candidate teachers about teaching mathematics were examined. The metaphors produced by candidate teachers for the concept of Mathematics Teaching are presented in Table 4.

Table 4. "Mathematics Teaching" Metaphors of Candidate Primary school teachers

Theme	Metaphor (Frequency)	Frequency
A teaching field with no end of basic usefulness	Life (6), processes (1), water (1), training (2), raising warriors (1), teaching how to walk (2), the branch that helps all areas of life (1), the stars (2), the rhythm of our heartbeat(1), nature(1), the ear(1), to coding(1), eternity(2), solving riddles(1), the key(3), finding a friend(1), a life form in the ocean(1), fishing(1)	29
A teaching field with rules, stages, order	Game (3), jigsaw puzzle (3), number puzzle (1), wall (1), embroidery (1), car (1), puzzle (2), crossword puzzle (3), helping a baby to talk (1), giving a recipe (1), dominoes (1), finding the way with a compass (1), lace covering(1), dancing in harmony with numbers(1), cooking(1), lace knitting(1), dancing with numbers(1), arguing, building a wall(1), erecting a building(1), making sense of mathematics(1), nature(2), solving a Rubik's cube(1),	30
An abstract-difficult, complex teaching field	Untangling a tangled thread(1), tracing(1), circling(1), grocery book(1), saving money in the bank(1), raising a child(1), difficult(1), a rutted road(1), a bottomless pit(1), waiting in traffic(1), tying knots(1), solving puzzles(1), a desert island(1), a bottomless pit(1)	14
A field that is fun and requires love	Game(4), puzzle(1), passing a difficult level(1), sky(1), to the cook(1).	8

Candidate teachers produced nine invalid metaphors about mathematics teaching. The metaphors about mathematics teaching were grouped under four themes. As seen in Table 4, candidate teachers produced the most metaphors about the concept of mathematics teaching in the theme *"A teaching field with rules, stages and order"* (f=30). This was followed by the theme of *"A basic useful tool with no end" (*f=29). Thirdly, they produced metaphors in the theme *"An abstract, difficult, complex teaching field"* (f=14). The last metaphor was produced in the theme "A field that is fun and requires love" (f=8). When the frequencies of the metaphors produced by candidate teachers are examined, it is understood that they tend to see Mathematics Teaching as *"a teaching field with rules, stages and order"*. When the explanations of the *"game"* metaphors made by the candidate teachers were analyzed, it was seen that they pointed to two different themes. The metaphor *"It is like a game; because it is learned by having fun"* was coded under the theme of *"A field that is fun and requires love"* based on its explanation. The metaphor *"It is like a game....because it has rules, and you continue to learn when you learn the rules"* was included in the theme *"A field of education with rules, stages and order"* by considering the explanation. A similar situation is also valid for the *"puzzle"* metaphor. The themes were reached by taking into account the explanations made to the metaphor. Examples of the metaphors produced by candidate teachers for the concept of *"Mathematics Teaching"* are given below:

A Non-Ending Basic Useful Space: The candidate teachers who produced metaphors under this theme stated that they see mathematics teaching as a field of learning that is necessary for life.

Processes Metaphor: "In our lives, we constantly do things, we perform operations. Mathematics teaching is these operations, we add something to our lives, it is addition, we subtract something from our lives, it is subtraction. Mathematics teaching is the same way, we add new information to our knowledge, like addition. We use these throughout our lives."

A teaching field with rules, stages, and order

Puzzle Metaphor: "Mathematics is a step-by-step path and requires a mathematical foundation. If one piece is missing, we cannot reach the goal." (C31)

An Abstract-difficult, complex teaching field

The metaphor of Saving Money in the Bank: "It takes time, it takes effort, it is difficult, it is abstract, it requires patience, but in the end, the bank and its customers who deposit money in the bank benefit from this business." (C17)

A field that requires fun and love

Game Metaphor: "I think we should give the lessons to the students in the most entertaining and real-life related way. This opens the door to love". (C75)

Within the scope of the first question of the research, the metaphors of teachers' mathematics teaching were examined. The metaphors produced by teachers for the concept of "Mathematics Teaching" are presented in Table 5.

Table 5. Primary school teachers' Metaphors for the Concept of "Mathematics Teaching"

Theme	Metaphor (Frequency)	Frequency
A Non-Ending Basic Useful Space:	Puzzle(3), commander(1), learning life(1), logic prevails(1), life (5), birds chirping(1), problem solving in life(3), wheat(1), game(3), bees(1), guidance in life(1), water(1), lighthouse(1), blood circulating in our veins(1), never-ending legacy(1), success(4), salt(1), making numbers talk(1), rings formed by a stone thrown into water(1)	32
A Teaching field with a Rich Solution Path	Labyrinth(1), island of discovery(1), life(1), discovery(1), land(1)	5
A Teaching field with Rules, Stages, and Order	Jigsaw(1), chess(3), game(7), raising a baby(1), puzzle(9), lego(1), crossword(3), key(1), knotted pile of string(1), jigsaw(2), Rubik's cube(1), hoe(1), climbing a steep mountain(3), constructing a building (2), fictionalizing(1), constructing(1), machine(1), sprouting and growing a seed above the soil(1), building a wall(2), logic(1), matryoshkas(1), critical period(1), model making(1)	46
A Space Requiring Diversity in Teaching Methods and Techniques	Growing flowers(1), formalism(1), a choreographed dance(1), puzzle(1), theater play(1),	5
An Abstract-Difficult-Complex Teaching field	Making logic-numbers-abstraction tangible(1), hereafter(1), life(1), spider web(1), sculpture(1), acrobat(1), painting(1), air(1)	8
A Fun and Love Requiring Space	Riding a bike(3), puzzles(5), seeds(1), playing with numbers(1), amusement park(1), dark chocolate(1), magic lamp(1), dynamic learning(1), playing games(1), core (1)	16

As seen in Table 5, the metaphors produced by the teachers for the concept of "Mathematics Teaching" were explained in six (6) themes: *"A teaching field with rules, stages and order", "A basic-useful-endless tool", "A field that is fun and requires love", "An abstract-difficult-complex teaching field", "A teaching field with rich solutions"*. Primary school teachers produced the most metaphors under the theme of *"A Teaching Field with Rules and Stages"* for the concept of Mathematics Teaching. This was followed by the metaphors related to the theme of *"A Basic Useful Teaching with No End"*. According to these results, it can be said that candidate teachers tend to see Mathematics Teaching as *"A Useful Teaching field with Rules and Stages"*. Examples of the metaphors produced by teachers for the concept of Mathematics Teaching are given below:

A Non-Ending Basic Useful Space:

Life Learning Metaphor: "A guide in life". (T5)

A Teaching field with a Rich Solution Path

The Island of Discovery Metaphor: "Treasure can be reached in every way. The map is a criterion, but short or winding roads also lead to the treasure." (T14)

A Teaching field with Rules, Stages, and Order

Puzzle Metaphor: "If we cannot place the pieces correctly, if we cannot teach the concepts, the puzzle can never be whole. It is always incomplete, always incomplete". (T12)

A Space Requiring Diversity in Teaching Methods and Techniques

The metaphor of formalism: "It is impossible to explain the subject without concretizing mathematics, without using materials, without creating a plate in the student's mind." (T21)

An Abstract-Difficult-Complex Teaching field

The metaphor of Making Logic-Numbers-Abstractness Palpable: "Although mathematics is a lesson that finds a place in daily life, it does not change the fact that it is a relatively abstract and difficult lesson." (T24)

A Fun and Love Requiring Space

Core Metaphor: "It is very enjoyable to teach. Once you start the lesson, you cannot stop". (T58)

Within the scope of the second question of the research, the metaphor themes produced for the concepts of teaching and mathematics teaching were examined. The metaphor themes produced for "Teaching" and "Teaching Mathematics" are presented in Table 6.

Table 6. Comparison of Themes Related to Candidate and Primary School Teachers' Metaphors of Teaching and Mathematics Teaching

Themes of Teaching Concept		Themes of Mathematics Teaching	
Primary School Teacher Candidate	Primary School Teachers	Primary School Teacher Candidate	Primary School Teachers
Developing, Useful, Infinite Knowledge Process (f=57)	Teacher Qualification (A Process Requiring Love, Effort, and Labor) (f=11)	A teaching field with no end of basic usefulness (f=29)	A Non-Ending Basic Useful Space (f=32)
Mutual Impact Process (f=4)	Mutual Impact Process (f=7)	A teaching field with rules, stages, and order (f=30)	A teaching field with rules, stages, and order (f=46)
Process of Discovering Talents - Individual Differences (f=4)	Process of Discovering Talents - Individual Differences (f=8)	An abstract-difficult, complex teaching field (f=14)	An abstract-difficult, complex teaching field (f=8)
Teacher Qualification (A Process Requiring Love, Effort, and Labor) (f=13)	An Emotionally Rich, Productive Action (f=8)	A field that is fun and requires love (f=8)	A Fun and Love Requiring Space (f=16)
	A Necessary-Cumulative Process (f=39)		A Teaching field with a Rich Solution Path (f=5)
	The Job of Providing Useful Information and Guidance to People (f=40)		A Space Requiring Diversity in Teaching Methods and Techniques (f=5)

When Table 6 is examined, it is understood that the metaphor themes of primary school teachers' both teaching and mathematics teaching are diversified compared to candidate primary school teachers. The fact that the metaphors produced by the teachers are related to more themes can be accepted as a sign that professional experience leads to a richness in the meanings attributed to these concepts.

DISCUSSION, CONCLUSION, AND SUGGESTIONS

It is a known fact that teacher beliefs have an undeniable place and importance in teaching. For this reason, in this study, the metaphors of candidate primary school teachers and primary school teachers about mathematics teaching and teaching were examined to determine the mental framework they formed about the subject.

Inferences from Pre-service Teachers' and Teachers' Metaphors Regarding the Concept of "Teaching"

The most prominent theme for candidate teachers' teaching metaphors was *"developing, useful, accumulative, infinite knowledge process"*, while the themes of teachers were *"giving useful information to people, guiding, and a necessary-accumulative process"*. It is understood that both candidate and teachers characterize the concept of teaching as a phenomenon that is beneficial to people and develops them. It can be said that the themes of *"Process that develops people-useful etc."*, *"Mutual impact process"*, *"Process of discovering talents and individual differences"* and *"Teacher quality (a process that requires love, effort, and labor)"* correspond to the themes of *"Process of transferring knowledge"*, *"Interaction"*, *"Shaping" and "Effort"* that Çetinkaya and Eskici (2018) determined for the teaching metaphor of candidate teachers. These results are similar to the results of some other studies (Martinez et al., 2001).

Teaching and learning can also be characterized as a useful process of acquiring knowledge aimed at the development of the individual. It can be said that the education received by candidate and primary school teachers has led to the formation of this conceptual framework. It can be said that candidate teachers schematize teaching as a process of guiding individuals to acquire knowledge rather than transferring knowledge and that they adopt innovative learning approaches. A recent study focused on the relationship between mathematics teachers' talk about teaching and their teaching practices and found that the teaching practices of teachers with both traditional and innovative discourses were also related to their discourses (Davis, Towers, Chapman, Drefs, & Friesen, 2020). If these results are evaluated together with the results of our current study, it can be said that the beliefs of teacher candidates and teachers about the concept of teaching can be reflected in their teaching practices.

When the other themes related to the concept of teaching are examined, it is understood that both candidate and primary school teachers have a view on *individual differences and abilities* in teaching following their teaching content knowledge. This mental schema for the concept of teaching is in line with the explanations in the Primary School Mathematics Curriculum (MoNE, 2018). The only striking difference here is that teachers produced metaphors for the concept of teaching that fall under the theme of *a productive action that provides emotional richness*. It can be thought that teachers gain emotional richness in the teaching process with the effect of professional experience and reach the pleasure of teaching-learning. The fact that some of the teachers' teaching and mathematics teaching metaphors were collected in the affective attribution theme is consistent with the view that metaphors can reflect not only cognitive but also affective attributions towards events and phenomena (Kadunz & Straber, 2004; Eren & Tekinarslan, 2013). As a result, it can be stated that teachers and candidate teachers have a mental framework for teachers' teaching competencies, their mastery of a certain subject area, their competence in explaining this subject area, and their role in facilitating the process.

Inferences from Pre-service Teachers' and Teachers' Metaphors Regarding the Concept of "Mathematics Teaching"

In the metaphors related to *mathematics teaching, the common themes of a teaching field with rules, stages, and order, a teaching field without a basic useful end, and a teaching field with rules, stages, and order come to the fore for both candidate primary school teachers and primary school teachers. These are followed by the themes of an abstract-difficult, complex teaching field; a field that requires fun and love.* Unlike candidate teachers, primary school teachers also produced metaphors for mathematics teaching as a *teaching field with rich solutions and a field that requires diversity in teaching methods and techniques*.

It can be said that both candidate teachers' and teachers' metaphors of mathematics teaching in the theme of *an abstract-difficult teaching field* contain negativity about teaching and learning mathematics. In reality, teachers' mental schemas about mathematics teaching include *mathematical knowledge, beliefs about mathematics teaching and learning, and several other factors* (Ernest, 1994). Olsen (2020) reached similar results in a study. Beliefs about the nature of mathematics are also the primary source of teachers' beliefs about students' teaching and learning (Cross, 2009). The beliefs they formed in their undergraduate courses on teaching and learning may have been effective in their schematization of mathematics teaching as a rule-gradual and cumulative process. In this study, it can be stated that teachers' beliefs about mathematics teaching may have been influenced by their beliefs about the nature of mathematics and the accumulation of teaching strategies used in the lessons.

When the metaphors of candidate and teachers about the concept of mathematics teaching were examined, the themes of *"an abstract-difficult, complex and patience-requiring teaching field" and "a teaching field that has no basic useful end"* came to the fore the most. It can be said that the theme of *"necessity/indispensability"*, which Tarım et al. (2017) identified as one of the themes that candidate primary school teachers produced the most metaphors about mathematics teaching, corresponds to the theme of *"a basic useful teaching field that has no end"* in this research. Again, the theme of "a field that is fun and requires love" obtained in this study overlaps with the theme determined by Tarım et al. (2017) as *"desire/emotion"*. The fact that teachers produced fewer metaphors than candidate teachers on the theme of mathematics teaching as an *"an abstract-difficult-complex teaching field"* can be considered a result of their teaching experiences and that their perceptions started to turn positive. Sahin (2013)'s result that pre-service teachers who had difficulties in mathematics during their high school years perceived mathematics as a difficult lesson supports our findings. Primary school teacher candidates study mainly mathematics in high school. Therefore, their perceptions of mathematics are positive. The mathematics teaching metaphors of teachers and candidate teachers may have been influenced by their mental codes about the content of mathematics and mathematics teaching. Despite the teaching experience of teachers and candidate teachers who had difficulties in learning mathematics during their student years and saw mathematics as a difficult learning field, they may continue to see mathematics learning and teaching as a difficult field due to the stability in beliefs. This issue can be addressed in future research.

The fact that teachers produced metaphors about mathematics teaching under the themes of *"a teaching field with rich solutions"* and *"a field that requires diversity in teaching methods and techniques"* indicates that their exploration of mathematics teaching increased with experience. These two themes produced by primary school teachers differently from candidate teachers can be considered as a sign that beliefs about mathematics teaching have started to change with professional experience and professionalization in the profession. This result is in line with the views suggesting that implicit beliefs in learning and teaching conceptions may differ depending on whether one is a student or a teacher (Saban et al., 2007). Teachers have to show different teaching and solution methods while teaching mathematics to students in their classes. For this, the teaching methods and strategies used in the lessons have to be diversified. With these experiences, it can be thought that some of the teachers produced metaphors that fall under the themes emphasizing the activities of mathematics teaching.

Inferences from Metaphor Themes Regarding the Concepts of "Teaching" and "Mathematics Teaching"

It is understood that both teachers and candidate teachers have a mental schema about the concepts of teaching and mathematics teaching as a useful and endless knowledge-teaching process. Similarly, metaphors emphasizing affective qualities about both teaching and mathematics teaching were also used. It can be said that Shaw and Mahlıos' (2008) conclusion that candidate primary school teachers' metaphors about teaching and literacy teaching indicate diversity in beliefs, but that these metaphors can be brought together in the context of dominant themes will also be valid for mathematics teaching and teaching metaphors, which is a special content area. Depending on experience, primary school teachers start to produce metaphors for affective and methodological knowledge. This result is proof of the change in beliefs with professional experience. It can be thought that candidate teachers' and teachers' implicit philosophies about mathematics are reflected in mathematics teaching. While mathematics teaching metaphors include mathematics subject area knowledge such as *"a field with rules, stages, and phases"* and teaching beliefs such as *"an abstract and complex field"*, teaching metaphors also point to the subject area knowledge and beliefs about the teaching process. It can be said that the metaphor themes of teaching and mathematics teaching are differentiated at this point.

The environment of the university-level mathematics teaching course that candidate teachers underwent may have shaped their perceptions about mathematics instruction. It may be suggested that future research identify the metaphors employed by lecturers in mathematics teaching courses and analyze the interpretations that candidate teachers assign to these metaphors. It is also possible to look into how teachers' opinions about math instruction and learning affect students' attitudes toward math instruction and their performance in the mathematics teaching course. If teachers' classroom methods reflect their views on learning and teaching mathematics, this can be looked into. It may be suggested to investigate whether the schematization of mathematics teaching as a discovery process is due to beliefs about the nature of mathematics or beliefs about teaching strategy. It may be suggested that diversify the methods and strategies used in mathematics teaching courses. Exemplary applications for field teaching courses, such as mathematics teaching, may also be included in education science courses for teaching. Lessons in teacher training programs may be structured in an application-oriented manner.

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The Invisible Battle: Investigating the Relationship Between Coronavirus Stress, Affective Balance, Mindfulness, and Psychological Health in University Students During the Pandemic

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Abstract

This study examines the effect of coronavirus stress, affective balance, and mindfulness on psychological health. The participant group of the study consisted of 692 university students, 391 (56.5%) of whom were female and 301 (43.5%) of whom were male. The mean age of participants was 21.08 (Sd = 1.91). Results indicated that coronavirus stress was significantly and negatively related to positive affect, mindfulness, and psychological health but positively to negative affect. The relationship between coronavirus stress and psychological health was partially and serially mediated by affective balance and mindfulness. These findings suggest that affective balance and mindfulness are important mechanisms that may help explain the effect of coronavirus stress on psychological health.

Keywords: Coronavirus Stress; Affective Balance; Mindfulness; Psychological Health

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INTRODUCTION

Although nearly three years have passed since the pandemic outbreak, the number of people negatively affected by the pandemic has been increasing daily. WHO reported that as of September 2022, about 601 million people were infected with COVID-19, and approximately 6,5 million died (WHO, 2022). These reasons have put the world in unprecedented uncertainty. Hence, to combat the worldwide pandemic, interventions were implemented that seriously changed the routines of daily life.

In order to prevent the spread of the pandemic, quarantine, and lockdown regulations have been implemented since the early days of the outbreak. People have been separated from their loved ones due to COVID-19 restrictions. Furthermore, there have been ongoing concerns about health conditions (McDonald et al., 2022). A recent multinational study including 35 countries showed that 26.7% of the participants had symptoms of depression. Moreover, this study found that 28.2% of participants had anxiety symptoms, while 18.3% had stress symptoms (Chen et al., 2021). Because individuals were at risk during the COVID-19 pandemic, it is necessary to consider the psychological health of all individuals, regardless of whether they were infected.

Schools closing due to the pandemic has led to a lack of social interaction and access to stress-coping resources for students. The shift to online teaching has further limited the interaction between students and teachers. The pandemic has significantly impacted students of all educational levels, as they may have lost their social resources, such as peers and teachers (Angelina et al., 2021). Personal resources, such as mindfulness and affective balance, may mediate the relationship between coronavirus stress and psychological health, especially when social resources are limited in people of all ages.

Alongside the positive emotions, university students may experience more negative emotions than ever due to sudden changes and long-lasting uncertainties during the pandemic. Thus, the perspective of existential positive psychology (PP 2.0) will be more meaningful in evaluating the COVID-19 pandemic that affects our lives profoundly. PP 2.0 suggests that balancing individuals' negative and positive emotions effectively protect psychological health (Wong, 2019). Maintaining optimal affective balance is challenging during the pandemic. Thus, university students' psychological health may be at risk due to higher negative emotions. As another theoretical basis of this research, according to the broaden-and-build theory, positive emotions are valuable sources of enhancing thought-action repertoires, and the scope of attention (Zhao & Zhang, 2022). Thus, affective balance is essential for psychological health. However, when coronavirus stress emerges, the impact of affective balance on psychological health may be more critical.

Similar to affective balance, the role of mindfulness is significant in the relationship between coronavirus stress and psychological health because affective balance and mindfulness are not only associated with each other (Ramasubramanian, 2017) but are also directly related to stress (Johnson et al., 2021). On the other hand, Enkema et al. (2020) claimed that mindfulness is not always associated with affective balance. As a result, this study identified affective balance and mindfulness as potential mediating factors. It is useful to examine the literature on coronavirus stress and psychological health separately to understand the function of affective balance and mindfulness.

Coronavirus stress, affective balance, and mindfulness

There has been a worldwide effort to take serious measures to prevent the spread of the COVID-19 pandemic. After the implementation of measures, people have faced severe negative consequences such as economic stress, job loss, and loss of social support (Saladino et al., 2020). All these undesirable consequences led to unpleasant experiences during this challenging period, making the coronavirus a major source of stress (Arslan et al., 2021). Due to the significant impact of coronavirus stress, there is a need to examine specific cognitive and affective factors that may influence psychological health during the COVID-19 pandemic (O 'Connor et al., 2022).

Positive and negative emotions are evaluated within the 3-component structure of the concept of happiness according to the subjective well-being model (Diener, 2000). Affective balance is the dominant factor in identifying an individual's perception of happiness. The closer the affective balance is to the optimal level, the more positive the person will respond to the negativities in daily life (Veilleux et al., 2020). Affective balance has consistently been linked to psychological health in the literature, as demonstrated in a study by Arslan et al. (2021). They found that affective balance plays a crucial role in maintaining psychological well-being. On the other hand, Denes et al. (2017) stated that individuals' affection preferences may differ. Thus, examining affective balance with psychological health during the COVID-19 pandemic is crucial.

As another factor related to coronavirus stress, mindfulness refers to noticing what the individual goes through (Kelly, 2022). In this respect, mindfulness is a crucial self-regulatory and stress-coping strategy (Skelly & Estrada-Chichon, 2021). In addition, mindfulness reduces ruminative thoughts, expressed as the frequent use of negative thoughts and evaluations towards oneself (Thompson et al., 2021). Therefore, the role of affective balance and mindfulness in the relationship between coronavirus stress and psychological health can be significant.

Affective balance, mindfulness, and psychological health

Studies suggest that relatively more expressions of positive emotions than negative ones positively impact resilience (Xie et al., 2019), well-being, and psychological health (Veilleux et al., 2020). Also, Arslan et al.'s (2021) study showed a positive and moderate correlation between positive emotions and psychological health. In contrast, a negative and moderate association was found between negative emotions and psychological health. In conclusion, discussed studies highlight that changes in affective balance may impact psychological health in a stressful situation, such as the COVID-19 pandemic.

Dillard and Meier (2021) indicate that mindfulness is positively associated with psychological health and well-being. Moreover, Liu et al. (2022) claim that mindfulness is negatively related to many undesirable factors (depression, anxiety, and stress). Similarly, a Systematic Review study in which 93 articles were examined revealed a negative association between mindfulness and psychological symptoms (Tomlinson et al., 2018). On the other hand, Roche et al. (2020) indicated that mindfulness does not always compensate for adverse conditions. Thus, it is crucial to investigate the role of mindfulness in the relationship between coronavirus stress and psychological health.

Affective balance is more optimal in older adults than young adults because negative affect decreases and emotion regulation increases with advancing age in adulthood (Wrzus et al., 2014). Emerging adulthood confronts young adults with many uncertainties, hard decisions, and changes. Thus, the young adult population should be targeted in terms of psychological health (González-Sanguino et al., 2020). Because affective balance is less stable for young adults, they may be more susceptible to potential crises, such as the COVID-19 pandemic, and immediate changes. That is why university students were selected as the participant group for this study.

Current Study

This study aims to investigate the effect of coronavirus stress, affective balance, and mindfulness on psychological health. The significance of determining the factors that mediate the relationship between coronavirus stress and psychological health is evident (O'Connor et al., 2022). Because affective balance is associated with mindfulness for various reasons like lower rumination (Tumminia et al., 2020), emotional clarity, and avoiding distraction (Carleton et al., 2018), this research takes into consideration affective balance as well as mindfulness in the relationship between coronavirus stress and psychological health.

On the basis of the above-discussed literature, the following hypotheses were tested.

1. Coronavirus stress negatively predicts psychological health.

2. The relation between coronavirus stress and psychological health is mediated by affective balance (positive and negative affect).

3. The relation between coronavirus stress and psychological health is mediated by mindfulness.

4. The relation between coronavirus stress and psychological health is serially mediated by affective balance (positive and negative affect) and mindfulness.

In the context of the research model, the evaluation of affective balance and mindfulness as mediators was conducted in a systematic manner. Initially, the mediating role of each variable was assessed individually (Hypothesis 2 and 3). Subsequently, the joint mediation effect of both variables was analyzed in a combined model (Hypothesis 4)."

METHOD

Participants

The participant group of the research was 692 university students. Of the participants, 391 (56.5%) were female, and 301 (43.5%) were male. In addition, the age of the participant group is between 18 and 24 years (mean age = 21.08±1.91). A sample of 692 university students was collected using a convenient sampling method. Convenient sampling is a type of sampling method in which researchers select participants for their study based on their availability and accessibility..

Measures

Coronavirus Stress

The Coronavirus Stress Measure was developed by Arslan et al. (2021) to assess the stress caused by the COVID-19 pandemic. The scale was adapted from the perceived stress scale developed by Cohen et al. (1983). The scale has a one-dimensional and 5-item structure (e.g., “How often have you felt nervous and stressed because of the COVID-19 pandemic?”). In addition, the Coronavirus Stress Scale is a self-report and 5-point Likert scale, ranging between 0 = never and 5 = very often. As a result of the explanatory factor analysis performed during the adaptation process of the scale, it was concluded that the scale had a good fit ($\chi 2$ = 67.21, sd = 5, CFI =.98, TLI =.96, RMSEA =.16, SRMR =.06). The scale has high reliability (α= .83) in the Turkish sample. The Cronbach alpha reliability coefficient of the scale for this study is .80.

Affective Balance

We used the Positive and Negative Experience Scale to measure the participants' affective balance. The scale was developed by Diener et al. (2010). The scale consists of 2 sub-dimensions (positive emotion and negative emotion) and a total of 12 items. Telef (2013) carried out the adaptation study of the scale to the Turkish sample. In the adaptation phase, the scale fitted well ($\chi 2$ / sd = 1.80, CFI = .99, NFI = .97, RMSEA = .04, SRMR = .03). In addition, the Cronbach alpha reliability coefficient of the scale was calculated as .85 for positive emotion and .75 for negative emotion. This study's Cronbach Alpha reliability coefficients were .88 and .81, respectively.

Mindfulness

Mindfulness was measured using the Compassion scale developed by Pommier (2011) to measure the mindfulness levels of the participants. The mindfulness subscale consists of 4 items (e.g., “I pay careful attention when other people talk to me”) that measure the awareness levels of young

adults. Akdeniz and Deniz (2016) carried out the adaptation study of the scale to the Turkish sample. In the Turkish version of the scale, item factor loads range from .46 to .64. In the adaptation study, the Cronbach alpha reliability coefficient of the scale was .85. The Cronbach alpha reliability coefficient for this study is .72.

Psychological Health

Psychological health was measured using the Psychological Health Problems Brief Symptom Inventory (BSI-18) developed by Derogatis and Fitzpatrick (2004), translated and validated in the Turkish context by Arslan et al. (2022). The inventory consists of 18 items including 3 sub-dimensions: depression (e.g., "Feeling no interest in things"), anxiety (e.g., "Nervousness or shakiness inside") and somatization (e.g., "Faintness or dizziness"). Arslan et al., (2022) obtained indicate that the scale has sufficient compliance ($\chi 2$ / sd = 3.19, CFI = .92, TLI = .90, RMSEA = .07). In the related study, the reliability cast number of the scale was .93. The Cronbach alpha reliability coefficient of the scale for this study was .83.

Data Collection

Before starting the data collection process, research approval was first obtained. During the data collection process of the research, data were collected online (due to the Covid-19 pandemic and the lack of face-to-face education in schools) in accordance with legal procedures. In this context, the link prepared via Google Forms was sent to the students via the student information system, e-mail and communication applications such as WhatsApp. In addition, an informed consent form link declaring that students voluntarily participated in the data collection process was added to the online form. The students were informed that they could leave the research whenever they wanted. Since each of the questions presented to the participants during the data collection process required an answer, there was no missing data during the research process. Finally, the data collection process of the study took place between November 2021 and December 2021.

Data Analyses

This research examined the mediation of positive affect (M1), negative affect (M2), and mindfulness (M3) in the relationship between coronavirus stress (X) and psychological health (Y). Before the data analysis phase, as researchers, an online form was sent to those who volunteered to participate in the research in order to reduce the sampling error. In addition, the data were collected by exceeding the minimum required number in order to reducesampling error. Missing data analysis was made for the collected data, and its suitability for parametric tests was examined. Then, multivariate analyzes of normality and outlier analyzes (kurtosis, skewness) were performed. In this context, we used the MVN package in R (4.1.2) to calculate the multivariate skewness and kurtosis values of Mardia. As a result of this procedure, the multivariate normality of Mardia was confirmed ($p>.05$). Consequently, a total of 723 young adults were reached, and the scale form of 31 students was removed from the data set. Correlation analysis was performed to test the relationship between the variables. After revealing the relationships between the variables, the mediator role of positive/negative affect and mindfulness in the relationship between coronavirus stress and psychological health was examined with a contemporary approach. In the analysis of mediation models, instead of the traditional approach introduced by Baron and Kenny (1986) and expressed as the causal steps approach, the contemporary approach, which provides more valid and reliable results in mediation models, was used (Fritz & MacKinnon, 2007; Preacher & Hayes, 2008). In the next step, we performed the regression-based mediation analysis (Model 80) proposed by Hayes (2018).

In the final stage, the (10,000) re-sampling bootstrapping method was applied to estimate the 95% confidence intervals (CI) to examine the significance of the indirect effects (Preacher & Hayes, 2008). Mediation analyzes were performed using the PROCESS macro (Hayes, 2018).

Ethical Rules Followed in This Research

In this research process, we paid attention to Research and Publication Ethics. In this context, carried out within the scope of the permission obtained based on the decision of the Ethics Committee of X University Institute of Educational Sciences Unit, dated 11/11/2021. Besides, the data collection process was continued only with students who accepted voluntary participation (approved the informed consent form).

RESULTS

In the preliminary analysis phase of the study, the kurtosis and skewness coefficients of the variables were calculated first. Table 1 shows that the kurtosis values of the variables are between -.26 and .08; skewness values range from -.21 to .11. Also, the kurtosis and skewness values are between ± 2 criteria for the assumption of normality. This means that all variables have a normal distribution (George & Mallery, 2010).

Then, the relationship between the variables was examined. In this context, first of all, there is a significant and positive relationship between psychological health and mindfulness ($r = .33$, $p < .01$). There is a negative and moderate correlation between coronavirus stress and positive affect ($r = -.32$, $p < .01$), mindfulness ($r = -.26$, $p < .01$), and psychological health ($r = -.39$, $p < .01$). Also, contrary to this situation, there was a positive and moderate relationship between coronavirus stress and negative affect ($r = .25$, $p < .01$). In addition, there was a moderate and positive correlation between positive affect and mindfulness ($r = .25$, $p < .01$), psychological health ($r = .27$, $p < .01$). Finally, there was a negative and moderate relationship between negative affect and mindfulness ($r = -.28$, $p < .01$) and psychological health $r = -.34$, $p < .01$. These results are in Table 1.

Table 1 Descriptive statistics and correlation result.

	Mean	SD	Skewness	Kurtosis	CSTR	POE	NEE	MIND	PHEA
CSTR	14.04	3.04	.08	-.17	-	-.32**	.25**	-.26**	-.39**
POE	20.98	3.02	.02	.11	-	-	-.25**	.25**	.27**
NEE	17.07	3.99	-.26	.13	-	-	-	-.28**	-.34**
MIND	13.92	4.04	.04	-.19	-	-	-	-	.33**
PHEA	23.94	5.03	-.03	-.21	-	-	-	-	-

n= 692. ** p<.01. CSTR = Coronavirus stress. POE = Positive effect. NEE = Negative effect. MIND = Mindfulness. PHEA = Psychological health

Mediation Analyses

After examining the preliminary analyses, the mediation model was conducted to examine the direct and indirect relationships between variables. In this context, firstly, coronavirus stress significantly predicted positive affect ($\beta = -.32$, $p < .001$) and negative affect ($\beta = .25$, $p < .001$). Coronavirus stress explained 10% of the variance in positive affect and 6% of the variance in negative affect. In addition, coronavirus stress ($\beta = -.17$, $p < .001$) was a significant predictor of positive affect ($\beta = .14$, $p < .001$) and negative affect ($\beta = -.20$, $p < .001$) on mindfulness. As seen in Table 2 and Figure 1, coronavirus stress and affective balance factors explain 14% of the variance in mindfulness. This indicates that affective balance factors mediate the relationship between coronavirus stress and mindfulness.

Table 2 Coefficients for the mediation model (Unstandardized)

	Consequent															
	M_1 (Positive Affect)				M_2 (Negative Affect)				M_3 (Mindfulness)				Y (Psychological health)			
	Coeff.	SE	t	p	Coeff.	SE	t	p	Coeff.	SE	t	p	Coeff.	SE	t	p
Constant	25.41	.50	50.62	<.001	13.65	.50	27.52	<.001	16,79	1.29	12.97	<.001	26.73	1.33	20.11	<.001
X	-.21	.04	-8.87	<.001	.16	.04	6.90	<.001	-.19	.04	-4.38	<.001	-.58	.04	-7.32	<.001
M_1									.25	.04	3.81	<.001	.26	.04	2.49	<.01
M_2									-.36	.04	-5.41	<.001	-.38	.04	-5.69	<.001
M_3													.47	.04	5.23	<.001
	R^2 = .10				R^2 = .06				R^2 = .14				R^2 = .26			
	F = 78.63, p < .001				F = 47.65, p < .001				F = 36.19, p < .001				F = 59.29, p < .001			

Another finding of psychological health is coronavirus stress (β = -.26, p <.001), positive affect (β = .09, p < .05), negative affect (β = -.20, p < .001), and mindfulness (β = .19, p < .001). As a result, all variables explained 26% of the variance in psychological health. This result shows that psychological health is predicted by coronavirus stress, affective balance elements, and mindfulness. In other words, as seen in Table 2 and Figure 1, positive affect, negative affect, and mindfulness partially mediate the relationship between coronavirus stress and psychological health. In addition to these findings, the Bootsrapping method was applied to see the indirect and direct effects of coronavirus stress on psychological health, and 95% confidence areas were calculated. The results obtained are in Table 3.

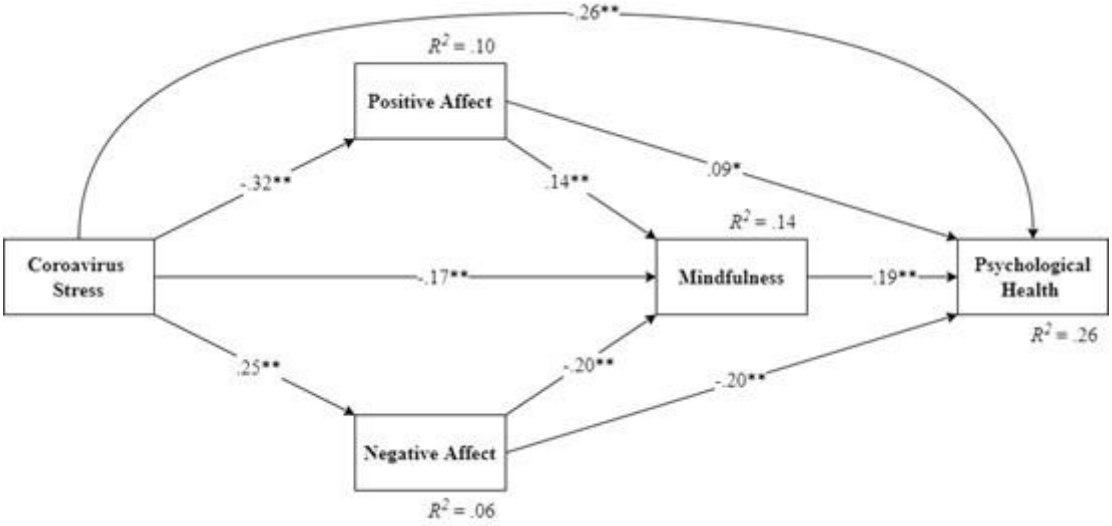

Figure 1 The research model of the study

Table 3 Unstandardized total, direct and indirect effects, and 95% bias-corrected confidence.

Paths	Effect	SE	BootLLCI	BootULCI
Total effect	-.39	.03	-.32	-.38
Direct effect	-.26	.04	-.19	-.25
Total indirect effect	-.13	.02	-.16	-.10
Coronavirus Stress --> Positive Affect --> Psychological Health	-.03	.01	-.05	-.01
Coronavirus Stress --> Negative Affect --> Psychological Health	-.05	.01	-.07	-.03
Coronavirus Stress --> Mindfulness --> Psychological Health	-.03	.01	-.05	-.01
Coronavirus Stress --> Positive Affect --> Mindfulness --> Psychological Health	-.01	.00	-.02	-.01
Coronavirus Stress --> Negative Affect --> Mindfulness --> Psychological Health	-.01	.00	-.02	-.01

DISCUSSION

The current study aimed to investigate underlying psychological mechanisms linking coronavirus stress to university students' psychological health. In this sense, this study sought the roles of affective balance and mindfulness in the context of the COVID-19 pandemic. Various studies on coronavirus stress and psychological health have been found in the literature. However, to the best of our knowledge, this is the first study addressing the mediators as affective balance and mindfulness for the relationship between coronavirus stress and psychological health.

Coronavirus Stress and Psychological Health

These results revealed, as we hypothesized, that coronavirus stress negatively and significantly predicts psychological health. On this basis, university students' psychological health is at risk of worsening when coronavirus stress arises. This finding is consistent with previous studies (Chen et al., 2021; Wang et al., 2022). Although a mature audience, such as the 18-24 age group, was selected for this study, the negative effect of coronavirus stress on psychological health emerged. This age group, consisting of university students, is supposed to be better at coping with difficulties than younger age groups (Oyoo, 2018). Thus, it can be predicted that coronavirus stress may adversely affect the psychological health of younger age groups, as they have fewer coping strategies than young adults.

Coronavirus stress affects the psychological health of university students regardless of whether they are exposed to coronavirus disease. Even only knowing the presence of the coronavirus influences psychological health. Hence, coronavirus stress is more likely to arise from a process that comes with uncertainty and develops gradually rather than a sudden change. The complete disappearance of the coronavirus is unlikely today. Coronavirus stress, thus, may exist in our lives for many years. Therefore, it will be useful to consider the possible mediating variables between coronavirus stress and psychological health to understand underlying psychological mechanisms.

The Mediating Role of Affective Balance

Coronavirus stress was negatively and significantly related to positive affect, but positively to negative affect. This finding supports that those experiencing coronavirus stress undergo negative emotions noticeably more. In addition, the negative relationship between coronavirus stress and positive affect indicates that coronavirus stress is an influential variable in reducing positive emotions. In this sense, coronavirus stress suppresses positive emotions in university students and leads to the augmentation of their negative emotions. This interpretation is coherent with the finding of Bachem et al. (2020), demonstrating that coronavirus-related problems are associated with negative emotions.

Moreover, the finding is in line with prior studies reporting that negative affect results in poor psychological outcomes, while positive affect brings about better outcomes (Deng et al., 2021; Wang et al., 2020). Positive affect plays a critical contributory role in coping with stressful life events. On the contrary, negative affect gives rise to university students being affected more deeply in stressful situations. Hence, negative affect deleteriously influences their mental health. Thus, affective balance tends to be less optimal for university students exposed to coronavirus stress because considering that the measures taken during the COVID-19 pandemic are significant stressors on university students, these stressors result in more inhibiting positive emotions and experiencing more negative emotions instead. Hence, negative affect adversely influence the psychological health of university students with high coronavirus stress levels.

The Mediating Role of Mindfulness

Findings from the present study confirm the mediator role of mindfulness in the relationship between coronavirus stress and psychological health. Mindfulness is an effective self-regulating mechanism, emphasizing the significance of creating awareness by paying attention to the present moment (Skelly & Estrada-Chichon, 2021). However, due to the stress brought on by the COVID-19

pandemic, it can become exponentially harder for university students to focus on the present in their already busy pace of life. At the same time, the daily lives of university students have necessarily changed with the coronavirus measures, so the coronavirus means more than just the source of stress that affects the individual (Saladino et al., 2020). The changes in social life led to an excessive number of factors that university students have to consider. Because university students, despite their enhanced cognitive capacities, face more elements than usual to cope with, preserving mindfulness can be more challenging for them.

This finding may also be attributed to the exacerbation of ruminative thoughts. Mindfulness effectively prevents negative evaluations concerning oneself, called ruminative thoughts (Thompson et al., 2021). Because coronavirus stress negatively influences mindfulness, ruminative thoughts may co-occur. For this reason, a change in mindfulness is more likely to affect psychological health by causing ruminative thoughts. Thus, university students' mindfulness levels are at risk of plummeting with the emergence of coronavirus stress. Therefore, mindfulness is another significant mediator in the relationship between coronavirus stress and psychological health.

Affective Balance and Mindfulness as Serial Mediators

The findings of this study suggested that positive affect was positively associated with mindfulness, while negative affect was negatively associated with mindfulness. More specifically, the closer the affective balance of university students is to the optimal, the higher their level of mindfulness. The broad-and-build theory explains the relationship between affective balance and mindfulness, indicating that individuals with affective balance are more likely to have enhanced attention, thoughts, actions, and awareness, thanks to the predominance of positive affect (Zhao & Zhang, 2022). From this point of view, the coping skills of individuals who maintain affective balance markedly improve, thus bringing mindfulness to the fore (Tschacher & Lienhard, 2021). Therefore, affective balance predicts mindfulness for university students.

Limitations and Implications

The findings of this study should be interpreted with several limitations. First, this research is a cross-sectional study, which prevents us from making causal inferences. Future studies could be designed longitudinally to test the temporal variation of the model we tested in the research. In addition, the data obtained during this research process was self-report and limited to data from participants only. In this context, future studies can benefit from various sources of information (family members and friends) to test the relevant model. This research only explained the psychological health status of university students in the aftermath of the COVID-19 pandemic, but no information was obtained about their status before the COVID-19 pandemic. For this reason, the variables that affect university students' psychological health may be under the influence of different factors that have been ongoing since before the COVID-19 pandemic. Moreover, the study was conducted in a specific country with a specific social environment. Therefore, generalizing the findings to other regions and countries should be made with caution.

In this study, we preferred quantitative research methods. Future studies can be designed in a qualitative or mixed model to obtain more in-depth results. We also used a variable-focused approach in this research. Future researchers can test the model we tested with a person-centered approach. In addition, it should be considered that there is a need for research from the perspective of PP 2.0, which constitutes the theoretical basis of this research. Furthermore, intervention studies that encourage both affective balance and mindfulness should be carried out to protect/improve the psychological health of university students.

Because adapting to containment measures is challenging for university students, policies should target this specific group. Even if containment measures limit university students' daily lifves and expectations related to vaccination during the COVID-19 pandemic force university students, mindfulness-based interventions can effectively protect their psychological health. If interventions

focus on mindfulness and affective balance together, the adverse effects of the COVID-19 pandemic on university students may decrease. As university students start to be vaccinated and their self-help activities increase, there is a decrease in emotional reactions to covid. In this sense, instead of a crisis-based intervention, interventions in which individuals develop and recognize themselves will be more beneficial in matters concerning public health and especially youth.

CONCLUSION

The current study suggested that coronavirus stress deteriorated university students' psychological health even after three years from the first case of coronavirus disease. Moreover, affective balance and mindfulness partially and serially mediated the impact of coronavirus stress on psychological health. The findings of this study provide evidence for the broaden-and-build theory by stating that affective balance predicts mindfulness and mediates the relationship between coronavirus stress and psychological health. In addition, this study supports existential positive psychology theory by indicating that affective balance results in better psychological health. In conclusion, the study explains underlying psychological mechanisms connecting coronavirus stress to psychological health with the mediating effects of affective balance and mindfulness.

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CRediT Author Statement: FK, and BCK agreed jointly on setting the objectives of the research, how to collect the data and determine which analysis to apply. FK, and BCK played an active role in completing the study. While the FK worked to get the ethics committee approvals and the official permission work for the implementation of the scales, the FK and BCK conducted the data collection process. Examination of the suitability of the collected data for analysis was carried out by FK. The findings and discussion sections of the research were written by FK, NGK and BCK. The introduction and methodology parts were written by FK, NGK and BCK made proofreading of these parts.

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Evaluation of Turkish Origin International Students' Writing Skills in Academic Turkish

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Abstract

The number and quality of studies on Academic Turkish for international students has been increasing in recent years. The goals in Academic Turkish, which is becoming more and more evident day by day as a very important need, primarily focus on reading and writing skills. The most important problem encountered in Academic Turkish is seen in writing skills. Especially international students need more support in this regard.

This study was conducted with undergraduate, graduate, and doctoral students attending the Academic Turkish courses offered at the Asian Specialization Group of the Turkish World Parliamentarians Foundation. First of all, the language needs of the students were analyzed, their Turkish learning goals and Turkish proficiency levels were determined. In order to measure students' writing and reading skills, the activities focused on text reading and simultaneous writing, summary, and article studies. Based on the needs of the students, evaluations were made on the paragraphs and texts, and their frequent mistakes/errors were identified. In the meantime, the reasons why they made these mistakes/errors were emphasized by focusing on the students' written expression mistakes in the activities carried out within the scope of the Academic Turkish course. The case study method was applied in the research, and the data obtained through document analysis were described by content analysis method. In this context, 26 undergraduate and graduate students from different universities in the Asian Specialization Group were given written assignments and the mistakes made by the students were examined and categorized within the framework of these assignments. As a result of the study, it was evaluated that the students were quite inadequate in Academic Turkish. It was observed that the students had deficiencies in subjects such as the use of words and affixes, subject-predicate agreement, the use of tense affixes, the use of complementary verbs, the use of active/passive constructions, the correct and appropriate use of conjunctions, sentence structures, summarizing, quoting, academic perspective, spelling, and punctuation.

Keywords: International Students of Turkish Origin, Asian Specialization Group, Academic Turkish, Writing Skills, Writing Errors/Mistakes

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INTRODUCTION

International students study Turkish at TÖMER and if they pass a C1 level exam, they are placed in their departments. Even though most of the students take Academic Turkish courses offered at many universities, they cannot easily follow a departmental course when they move to their own departments, and they cannot carry out a writing-based productive activity. At this point, the academic teaching of Turkish, especially academic writing, emerges as a basic need for students. Therefore, students are in a search for Academic Turkish. Writing skill is expressed as the area where students have the most difficulty in the field of teaching Turkish to foreigners. It is valid not only for Turkish but also for all international students (Açık, 2008; Genç, 2017, Özdemir & Aslan, 2018; Biçer, Çoban, & Bakır, 2014). Writing skill is a productive skill by nature. At the same time, vocabulary/conceptual knowledge, grammar, meaning, and syntax knowledge should be used in harmony and correctly. Therefore, a deficiency in one of these areas may prevent productivity in writing.

Although students learn Turkish at C1 level and then take Academic Turkish courses, the reasons why they are so inadequate in reading and writing an academic text should be addressed seriously and the reasons for the inadequacy should be questioned.

Academic skills are partially taught at B2 and C1 levels in some books prepared for international students. After the C1 level, students affiliated to the Presidency for Turks Abroad and Related Communities are given compulsory 140 hours of Academic Turkish training in line with the request of the Presidency. However, the training usually turn into teaching processes that do not directly improve students' academic skills such as completing grammar deficiencies, analyzing texts, and doing non-functional writing activities. On the other hand, instructors who have no experience in Academic Turkish are unable to meet the needs of the students in this area. Since the teaching process is carried out during the summer semester, students may get bored and the efficiency of the lessons becomes questionable. Students may come from countries with different educational approaches, which directly affects their academic competencies and readiness. However, at the end of the teaching process, students are expected to use Academic Turkish skills at a standard level. Therefore, it is necessary for the Academic Turkish framework to be created for the students in this process and for the instructors to consider these differences in the students. It is important that the instructors have adequate equipment along with an Academic Turkish teaching that is sensitive to individual differences.

Today, there is a significant increase in the number of international students pursuing undergraduate and graduate studies in Turkey. It is known that the Presidency for Turks Abroad and Related Communities (YTB) provides scholarships to a significant number of international students. Along with these scholarships, specialized groups are formed by YTB with the support of relevant civil society organizations. One of these groups is the Asia Specialization Group, which is part of the Turkic World Parliamentarians Foundation and consists of international students of Turkish origin. For the students in this group, apart from their university courses, various seminars/lectures are given by experts, especially in Academic Turkish.

International students of Turkish origin state that their current level of Turkish is insufficient in academic settings. They prefer to carry out their academic studies in languages other than Turkish, despite the fact that they are pursuing graduate studies at universities in Turkey. In order to prevent this trend, it is necessary to identify the problems of international students of Turkish origin in Academic Turkish, to overcome these problems by using the most appropriate methods and techniques, and to increase their mastery of Academic Turkish.

It is possible to evaluate academic Turkish within the framework of four basic skills. These are academic reading, academic writing, academic speaking, and academic listening. Among these skills, academic writing is the one that students have the most difficulty with. Writing is a productive activity. Therefore, the student should take a more active role in this process. The Academic Turkish process, in which meta-cognitive knowledge and skills are frequently used compared to the level of Turkish used in daily communication, requires a planned, intensive, and in-depth preparation. In this process, there is a need for a preparation period in which the student can internalize, apply, and reinforce what he/she has learned. It takes 2-5 years to learn a language at an academic level. In this regard, students should be able to apply what they have learned without a break and their practices should be given feedback by instructors/experts. Another important point is the continuity of the studies.

In academic Turkish, the goals are primarily focused on reading and writing skills. The main reason for this situation is firstly the academic needs of students and then the problems they experience in writing practices. On the other hand, it is known that studies on these skills also improve listening and speaking skills. Reading and writing objectives in academic Turkish include and support the following concepts/elements in terms of their structural features and content: to determine the type, subject, main and auxiliary ideas of the text, to determine paragraph structures and forms of expression, to be able to comment on an academic text and develop/bring critical perspectives, to be able to write sentences, paragraphs, and texts in accordance with the academic framework, to learn ways of accessing information - dictionary, library use, etc, to apply spelling rules and principles of academic writing, to understand and interpret an academic text correctly, to be able to write academic texts according to the characteristics of genres.

When we look at the general framework of academic language, linguistic, discourse, reading, cultural, and resource needs come to the fore. These needs play an important and decisive role in the emergence of certain academic functions. On the other hand, these functions are necessary for the realization of an academic writing.

Writing is the most difficult skill for international students in Academic Turkish. This skill, academic writing, should be addressed at the level of international students of Turkish origin. Because while some of the students in this study have a C1 level certificate, some of them have attended Academic Turkish courses at various universities. For this reason, it may be thought that they use their writing skills competently. However, it is misleading. Although the students attended Academic Turkish courses, they are far away from understanding and interpreting an academic text and producing it in written.

Academic writing is a form of writing with predominantly scientific qualities. Academic writing is also defined as the process of creating texts within the framework of certain criteria in the preparation of academic research/studies. Bahar (2014: 213) defines academic writing as follows: "In addition to following the general rules of writing, all the principles taken into account in the reporting of a scientific research and that process itself, the textualization of the research is called academic writing."

Unlike other forms of writing, academic writing is based on a more serious plan and disciplined work. It is a completely planned, organized, and principled work in the process of systematic research, scanning sources, accessing data, and reaching a solution by evaluating/interpreting them in order to find a solution to a problem that exists. It is a writing skill which has its own principles in terms of content, form, writing principles, language, and expression in the process of reporting various types of research in the academic context. Academic writing consists of many structures such as purpose, organization, style, flow, and presentation. Academic writing is

different from formative writing and personal writing. Academic writing is also formal (Swales & Feak, 2012: 3; Oshima & Hogue, 2007).

This study aims to examine the deficiencies and errors/mistakes of international students of Turkish descent in writing in the context of academic Turkish. Thus, it is thought that the academic courses to be organized for international students of Turkish descent and the course materials to be prepared will be prepared in a way to meet the needs/deficiencies.

METHOD

In the study, one of the qualitative research methods, case study method was used. In order to measure the students' writing skills in Academic Turkish, they were asked to write academic texts, to make applications on academic texts prepared as activities, and these texts were accepted as documents and data were collected, and these documents were analyzed by content analysis.

The population of the study consists of students who receive Academic Turkish seminars organized by YTB in various non-governmental organizations and foundations. The sample group of the study consists of undergraduate and graduate students studying at Turkish World Parliamentarians Foundation (TDPV). Since the main framework of the study is composed of international students of Turkish origin, the sample group was purposively selected only from international students of Turkish origin. Of 35 students, 26 students were selected through purposive sampling due to their Turkish origin and the sample was reduced to 26. Of these students, 12% were undergraduate students and 88% were graduate students. The students have completed at least C1 level and have attended the Academic Turkish course at their universities. At the same time, when asked which seminars they would like to take as part of the course, these students happened to be volunteers who specifically preferred the Academic Turkish seminar. In this context, all of the students participated in the course voluntarily.

The distribution of students according to their countries of origin and numbers is as follows. Azerbaijan (Azerbaijani Turk) 8 students, Ukraine (Crimean Turk) 2 students, Kazakhstan (Kazakh) 6 students, Iran (Azerbaijani Turk) 2 students, Iraq (Turkmen) 1 student, Kyrgyzstan (2 Kyrgyz, 1 Uzbek) 3 students, Afghanistan (Uzbek) 2 students, Turkmenistan (Turkmen) 1 student, Turkey (Meskhetian Turk) 1 student. Most of the selected students study at the universities in Ankara. According to their number, they are listed as Ankara University, Hacettepe University, Hacı Bayramı Veli University, Gazi University, Yıldırım Beyazıt University and Police Academy. Of the students in the sample group, 9 are studying at the doctoral, 14 at the master's and 3 at the undergraduate level.

Scope of the Study

This study was conducted with undergraduate, graduate, and doctoral students who participated in the 6-week Academic Turkish courses given at TDPV Asia Specialization Group in 2018-2019. In order to measure the students' writing and reading skills, the activities focused on text reading and synchronous writing, article summary preparation, and article studies. Based on the needs of the students, evaluations were made on paragraphs, and texts and students' common mistakes/errors were identified. The focus was on students' written expression errors/mistakes in the activities carried out within the scope of the Academic Turkish course. Three tasks were built for the students, one of which was an applied text and two of which were to be written by the students themselves. The applied text was an academic text and the students were asked to analyze the text within the framework of academic skills and to perform activities for reading and writing skills. The self-written texts were an article summary and a book chapter.

Data Analysis

Within the scope of the three tasks given in the study, students' activities at word, sentence, and paragraph level based on an academic text were analyzed. In addition, the tasks given for article summary and book chapter were also analyzed and evaluated. The works of these students were accepted as documents. Students' assignments were analyzed by two experts and errors were coded and categorized. The coding was determined as a result of the experts' joint evaluation of the work of the student. In the analysis of the data, two field experts evaluated the student's assignments twice with the cross-over method and agreed on this issue by determining the errors/mistakes made. Another field expert's opinion was obtained and the data were validated. In order to correct these errors/mistakes, various in-class and post-class activities were carried out.

Limitations and Strengths

The selected students consisted only of students studying at TDPV. At the same time, the number of students in the study was limited. The fact that the course was limited to 2 hours in a 6-week program indirectly affected the efficiency of the study. It would have been more appropriate to give more time to the students for the studies they would prepare. On the other hand, within the scope of the study, an in-depth examination of whether the students' mistakes were errors or mistakes could not be made. For the study in question, an in-depth and one-to-one study should be conducted on each student's mistakes to determine the difference between them. Such an application was not done because it was outside the purpose of the study.

One of the main strengths of the study is that it was conducted with successful students from well-established universities in Ankara who were selected by YTB. It reduced the impact of existing limitations. Another strength of the study is that students and instructors had the opportunity to work one-on-one. The preliminary preparations made within the scope of the study, the effective planning of the contents and teaching processes, teaching methods and techniques were structured in line with the opinions of field experts. Students and instructors continued their studies outside the course hours. It played a very important role in overcoming the limited time allocated for the study.

RESULTS

The findings of this study, although not generalized, focus on the writing errors/mistakes of international students of Turkish origin in the context of Academic Turkish. It was observed that all of the students whose writing/reading tasks were evaluated within the scope of the study had significant deficiencies despite their participation in Academic Turkish courses at their universities. These deficiencies were determined by the coding of the experts working together and cross-coding on the same worksheets. The errors/mistakes of the students in question are the errors/mistakes made by the majority of the students. Two instructors who are field experts agreed on these errors/mistakes and another field expert verified the data. In this regard, the errors/mistakes made by the students were first identified one by one. When the most common errors/mistakes and deficiencies in these categories are evaluated by dividing them into headings, they can be listed as follows: Use of affixes in the wrong place / incorrect use of affixes / not using affixes, subject-predicate incompatibility, misuse of time affixes, use of complementary verbs, use of the passive voice, proper use of conjunctions, misuse or incorrect use of the word, unnecessary word usage, deficiencies in sentence writing and completion, use of personalized expressions that are incompatible with academic language, sloppiness in the use of academic vocabulary/wrong word choices, using vocabulary from their mother tongue, spelling and punctuation errors/mistakes, not paying attention to quotation rules, summarizing (lack of knowledge on how to write), finding the main idea, subject, cause-effect relationship in the text, lack of academic perspective when reading and writing texts.

The concepts of error and mistake were evaluated together in this study. The concept of error represents the inaccuracy that the student systematically makes, while the concept of mistake represents the inaccuracy that the student makes unknowingly even though he/she knows the correct

one. The main framework of the study is to determine the students' mistakes in general. Errors/mistakes were ranked from the most to the least according to their intensity. Although the reasons for the errors/mistakes are mentioned, the essence of the study is not to reveal these reasons with their justifications. It is the subject of another study. At this point, the reasons for the errors/mistakes were addressed superficially. Under the headings, there are sample sentences related to students' errors/mistakes. Sometimes more than one error/mistake can be found in the sample sentences. The errors/mistakes to be addressed are underlined, bolded, and italicized. Other errors/mistakes in the sentence were not taken into consideration.

1. Use of Affixes in the Wrong Place / Incorrect Affix Use / Not Using Affixes

The use of affixes in the wrong place, using the wrong affix and not using affixes are handled in the same error/mistake category and their examples are presented below:

- … diyet yapmakta olan insanlar(***x***) diyetin olumsuz etkilerini de dikkat***a*** almalarında yarar vardır.
- Bu kitap bastırmaya gönderil***ecek*** üzere lütfen son bir kez kitabınız***a*** kontrol ediniz.
- Bizim hayat biçimiz günümüzde de kışlak yaylak olarak hala devam et***tirilmektedir***.
- Ülkemizde çürüğün şiddet***liği***ni anlatılmaktadır.
- Günümüzde bu dillerden alınan bir çok kelime***ler*** vardır.
- Bu makale(***x***), geleneksel çürük(***x***) tedavi(***x***) için kavramsal değişiklikler (***x***) sağla***yacağını*** söyle***n***mektedir.

Among the subjects that international students have difficulty with is especially the use of affixes. They mostly have problems with noun inflectional suffixes and verb inflectional suffixes. In particular, case suffixes, possessive suffixes and affixes of interest are among the suffixes that cause the most problems. It is generally due to the structural differences between the student's native language and Turkish. If the student's native language is not an agglutinative language, he/she has difficulty in the correct use of affixes. In addition, the addition of affixes in Turkish according to vowel and consonant harmony poses a problem for students who do not have a good command of this structure. The reason for these problems is the presence of dominant languages other than Turkish in the country where some students live even though their native language is one of the Turkish languages. Languages such as Russian, Arabic, and Persian affect students' languages. Apart from the dominant language, due to the change in the use of affixes in the historical process, students also use the affixes they use in their native language in Turkish as well. For this reason, usage mistakes arise. On the other hand, students may transfer some words and affixes from their own language to the language they learn unconsciously. Errors/mistakes may also occur due to this transfer.

2. Subject-Predicate Incompatibility

Examples of errors/mistakes arising from subject-predicate incompatibility are presented below:

- 2009 senesinde yapılan nüfus sayımındaki rakamlara göre Azerbaycan Cumhuriyeti vatandaşları talışlar sayısı 111.996 kişi***le***rdir.
- ***Birçok*** azınlık grup***lar*** kendi aralarında savaştı***lar***.
- ***Herkes*** kendi dilinde duygularını en güzel şekilde ifade ettiği gibi, rüyalarını da kendi dilinde ***görürler***.

- Dil(***x***) kültür ve toplumun üzerinde nasıl ***etkilemektedir***?

- Bugün Anadolu kültürünün özelliklerini taşıyan *bu evler* tek tek ***yeniliyor*** yaşatmaya devam ediyor.

- Beypazarına nasıl ulaşabılırız ve (***x***) fiyatlardan ***bahsetmiştir.***

- ***Teknolojini*** sağlık alanına önemli derecede katkı sağladığı ***görülmüş*** ve uygulanabilir durumda olduğunu ***vurgulamaktadır.***

Subject-predicate incompatibility is one of the most common errors/mistakes made by students. Lack of subject in sentences, incompatibility of subject and predicate in terms of roof and uniqueness/multiplicity are noteworthy errors/mistakes. Students' tendency to construct long sentences and their lack of knowledge and practice on the function of affixes are largely effective in the emergence of errors/mistakes.

3. Misuse of Time Affixes

Examples of incorrect or incomplete use of time suffixes are presented below:

- Böylece yazıldığı şekilde okuyucular için daha meraklı çek***er.***

- Bir önceki paragraf arasında bağlantısız kal***ıyor.***

- İlk bilinen Türk halk derneği V yüzyılda Avrupa'da Hun olarak bilin***iyordu.***

- Dil aslında bir kültürdür ve ait olduğu toplumun medeniyetini yansıt***ıyor***

The present tense is one of the most frequently used tenses in academic texts by international students. However, the present tense suffix -yor is not used in academic texts due to its characteristic. Instead of this suffix, the suffix -makta/-mekte is used. It was observed that students lacked knowledge on this subject. On the other hand, it has been determined that students do not analyze enough academic texts on this subject in their Turkish learning processes and Academic Turkish lessons.

4. Use of Complementary Verb (-DIr)

Examples of errors/mistakes or incomplete use of the complementary verb (-DIr) are presented below:

- Hülakü Ebu Said'in ölümü üzerine Anadolu'da Moğol hakimiyeti ***zayıfladı***(***x***).

- Çalışmamızda Akkoyunlu ve Karakoyunlu Türmnelerinin Moğollar'la ilişkileri ele ***alınacak***(***x***).

- At adamın ***kanatı(x***).

- Dilin en küçük öğesi olan sözcüklere bakarak toplumu bir bütün halinde incelemek ***mümkün***(***x***).

- İnsanların gece gündüz ayarlamasında önemli etkiye ***sahip***(***x***).

In academic Turkish, the suffix -dır is one of the commonly used academic expressions. It has been determined that students do not use the suffix -dır very much or use different suffixes instead of this suffix.

5. Use of Passive Voice

Examples of errors/mistakes made by the students are presented below:

- ... sistematik mücadele edil***in***ebileceğini söyle***n***mektedir.
- Özerklik bireysel ifade ulaşmak ve hareket etmek çevre ile etkileşime girerek inançlar, ilgi alanları, tercihleri ve yeteneklerine bakılarak kendini düzenle***n***miştir.
- Bu törende tıpkı sünnet töreni gibi özel hazırlıklar yapılı***n***ır.
- Törene tüm akrabalar davet edili***n***ir.
- Misafirler toplandıktan sonra beyaz kumaş yere döşe***l***ir ve kumaşın bir tarafına çocuk diğer tarafına ise para, kitap, ayna koyu***n***ur.
- .... yapılmak gereken önemli hazırlıklar olduğunu anlat***ıl***maktadır.

One of the important features of academic texts is the frequent use of passive verbs. Errors/mistakes at this point stem from the lack of knowledge of verb forms.

6. Use of conjunctions in the proper place

Examples of errors/mistakes made by the students are presented below:

- İnsan ***sonuç olarak*** öteki canlılarda bazı hormonların salgılanması, beden sıcaklığının düzenlenmesi biyolojik saatin denetiminde yapılır.
- ***Ama*** bu doğal zamanlayıcıya biyolojik saat denir.
- Kazakistan bağımsızlığını 28 yıl önce kazandığına ***rağmen*** onun tarihi bundan çok önce başlamakdır.
- Şimdiye dek ***oldukça*** Arapça, Farsça ve diğer kaynaklar Türkçeye çevrilmiştir

In terms of building semantic relations, the use of conjunctions is an important determinant in sentences. In academic language, it is very important to build meaning contrasts, associations, comparisons, emphases, and semantic relations/bridges in sentences. Therefore, the appropriate and functional use of conjunctions strengthens the fluency and functionality of academic texts. However, it was observed that students were not adequate in the use of conjunctions and could make incorrect/wrong choices.

7. Misuse or Misuse of a Word in the Wrong Place

Examples of erroneous/incorrect or incomplete use of words caused by not using them correctly are presented below:

- ***Böylece*** yazıldığı ***şekilde*** okuyucular için daha meraklı çeker.

- Bir önceki ***paragraf arasında*** bağlantısız kalıyor.

- ***Bu kadar*** sağlık alanın ilerlemesine rağmen ***hale*** diş hastalıklarında kullanılmakta olan tedavi ve önleyici yöntemler dikkat çekmeyi arzu etmektedir.

- ***İlk*** bilinen Türk halk derneği V yüzyılda Avrupa'da Hun olarak biliniyordu.

- ***Rizk faktörleri*** birer birer sıralayarak ***anlatım,*** çok açıklayıcı ve net ***olur***.

Another error/mistake that international students often make is using a word in an inappropriate place or form. In this context, it should be emphasized to students that words do not have a single meaning and can acquire different meanings in different contexts.

8. Unnecessary Use of Word

Examples of incorrect/erroneous or incomplete use of unnecessary words are presented below:

- Her insan kendine ***sürekli değil*** arasıra ben kimim deye sorulması önemli.

- Yine her dilin, öfkesini, sevincini, korkusunu, acısını, sevgisini, kederini, saygısını ifade etme biçimleri de bu konularla ilgili deyim ve atasözlerinin zenginlik yahut ***yoksulluğu da yoksulluğudur***.

- 20 yıldan beri bu dersler sürüyordu ***ne yazık ki*** öğrenci sayısı yetmediğinden ***dolayı*** bu yıl dersi devam edilemeyecek.

The main reason behind the use of unnecessary vocabulary is that the texts are not reread carefully. It was observed that students generally lacked academic discipline and were careless in composing their texts.

9. Deficiencies in Writing and Completing a Sentence

Examples of incorrect/erroneous or incomplete use in writing and completing sentences correctly are presented below:

- Türkiye bölge Cumhuriyetlerinin bağımsızlıklarını tanıyan ilk ülke olmuş, çünkü (***x***).

- At ve tarımla ilgili olan sözcüklerin sıklığı(***x***).

- 1991de Orta Asyada meydana gelen yeni devletler(***x***).

- Kısa bir örnek vermek gerekirse balıklardan söz edebiliriz(***x***).

- Diş çürüğünün yaygılığı ve belirginliğinde ki azalmak(***x***).

It was observed that students sometimes did not complete sentences. In order to complete a sentence, it is necessary to have intellectual competence in the context of the relevant subject. Then, it is expected to complete the sentence with the use of correct words and language structures. At this point, it was observed that the students were not able to comment at a sufficient level in the intellectual dimension and within the framework of the relevant subject. It was determined that the sentences they formed did not have the characteristics of Turkish sentence structure. The abundance of broken and incompatible sentences draws attention.

10. Use of Personalized Expressions Incompatible with Academic Language

Examples of errors/mistakes made by students about the use of expressions that should not be used in an academic text are shared below:

- Mesela Eskimolarda kar kelimesi ile bağlantılı 100den fazla sözcüğüne dair bir şey ***okumuştum önce.***
- Kendimi değiştirmek iste***rim*** ve bunun üzerinden çalış***ıyorum***.

There are certain rules and patterns in academic language. It is necessary to know these rules well and to be meticulous in following them. Students are expected to know subjective and objective inferences and to be aware of this distinction in academic language when writing.

11. Carelessness in Academic Vocabulary Usage / Wrong Word Preferences

Examples of carelessness, incorrect/erroneous or incomplete use of the correct words in the writing of academic texts are presented below:

- İnsanların kullandıkları her nese ve her aletin ***kendi dilinde bilmesini öğretmek***.
- Risk faktörleri birer birer sıralayarak anlatım, ***çok açıklayıcı ve net olur.***
- Geçen paragraflara göre ***daha az anlatılmış geliyor. Keşke daha çok detaylar verilse.***
- Almaty'da çok sayıda ***universiteler olmakta***, bundan dolayı bu şehir ***öğrenci şehiri sayılıyordur.***
- Ayrıca ***Çin kaynaklarda batılı araştırmalardan Türkçeye çevrildiğinden dolayı*** birbirleriyle karşılaştırdıkça ***bazı çelişki ortaya çıkar***.
- Yukarıdaki bahsedilen faktörler tekrarlamak ***net bir sonuç olmuş.***
- İnsanlar artık ***ortaya ve henüz yakalanmamış*** hastalıklarını önceden kontrol edilebiliyor.

The biggest distinction between academic language and everyday language arises from the use of certain patterns and word choices in academic language. Certain stylistic features in academic language must be strictly paid attention. It points to habits of use as well as the acquisition of sufficient knowledge. Especially one-on-one studies are necessary to eliminate these mistakes/errors. It is clear that students do not receive sufficient guidance in this area.

12. Using Vocabulary from the Native Language

A common type of error/mistake in writing academic texts occurs when students use a word in their own language without checking its accuracy in Turkish. Examples of carelessness, incorrect/erroneous or incomplete use in this regard are presented below:

- Alban soylarından olan İngiloylar Kafkas Albanyası`nın Kambisena vilayetinde adı geçen 26 dilde konuşan ***tayfalarından*** biridir.
- Türk ***kaganatı*** güçlü zamanında, kuzey-doğu Çin, Moğolistan, Altay, Doğu Türkistan, Batı Türkistan ve Kakkazi'nin kuzey kısmının sahibi olmuş.
- ***Ciyografiyanın*** ve hayat tarzının dile ***enkisini*** anlatmaktadır.

- Böylece yazıldığı şekilde okuyucular için daha ***meraklı çeker.***

- Bizde devlet adamları değil toplumda yaşan insanlar kendi dillerin koruma ***amacıla*** yıllarca ***mücedele edeek*** dillerine ve kültürlerine sahip çıkmışlar ve ***hale çıkmaktadılar.***

- ***Ümummilli lider Heydər Əliyev Azərbaycan dilinə*** böyük önəm vermiş və bu sahədə islahatlar ***aparmışdır.*** Şah İsmayıl Xətai Azərbaycan dilini ***dövlət dili elan etmişdir.***

One of the mistakes that students often make is thinking that the word they use in their own language is also in Turkish and is used in the same way. Students can use a name/concept/word in their own language as it is. In some cases, although the word is common, the spelling may be different, and sometimes the word in the student's language has a different meaning in Turkish and can be expressed differently.

13. Spelling and Punctuation Errors/Mistakes

Examples of carelessness, incorrect/erroneous or incomplete use of spelling and punctuation are presented below:

- Ancak Anadolu'nun ***t***ürkleşmesinde önemli bir etken olmuştur.

- İlk bilinen Türk halk derneği ***V*** yüzyılda Avrupa'da Hun olarak biliniyordu.

- Başka dillerin ***türk*** diline tesiri neticesinde ***türk*** diline geçmiş olan sözleri örnek olarak ***göstere bilirdi***.

- … çünkü bir toplumun kültürü ne kadar zengin ise dili de ***oran da*** zengindir.

- Ama hayatta her şey p***i***lanladığımız gibi gitmiyor ve biz her ne kadar p***i***lan yap***sakta*** hayat bize farklı seçenekler sunuyor.

- Göktürk Yazıtları'nda ***ki*** savaşla, orduyla ilgili kelimelerin geçmesi Türk halkının ne kadar savaşgan ve güçlü olmalarının göstergesidir.

- Metnin başında diş çürüğünü ***bir çok*** ülkede azalma göstermesine rağmen henüz Türkiy***ed***e azalma söz konusu değildir.

Students generally have deficiencies in this regard. Working with students much more frequently and regularly and giving one-on-one feedback on their mistakes/errors would be a functional way to solve the problem.

14. Lack of Attention for the Citation Rules

Examples of carelessness, incorrect/erroneous or incomplete use of citations in academic texts are presented below:

- Yetkili makam kararı ile vatandaşlığın kazanılmasını ifade etmek için doktrinde ‘‘telsik’’ deyimi kullanılmaktadır. Telsik, yabancı veya vatansız kişinin kanunda aranan şartları yerine getirmek kaydıyla, kendi iradesiyle vatandaşlık bağı ile bağlı olmayan bir devlet vatandaşlığını yetkili makam kararı ile kazanmasıdır. (Source is not cited.)

- 2009 yılının nüfus sayımı rakamlarına göre Azerbaycan Cumhuriyeti ahalisinin 8.4 % `ni azınlıklar oluşturmaktadır. (Source is not cited.)

- Ama bu alanda araştırma yaparak Gürcü ve İngiloy dillerini karşılaştıran profesör Marrin`e göre İngiloylar hakkında kendilerinin yazdıklarından değil, Gürcü kaynaklarından okuduklarımız malumdur. (The date of the study is not specified and the source is not cited correctly.)

One of the most important deficiencies identified in students is citation rules. Although most of the students cite in their texts, they do not specify the source person or use incorrect/incorrect citation expressions. Most of the students in the research are graduate students. Therefore, although these students read academic books, articles and theses, they could not develop awareness about citation rules. It is understood that many of these students did not emphasize the subject of quotation sufficiently in the Academic Turkish courses they took before.

15. Summarizing (lack of knowledge on how to write a summary)

The students were asked to write a summary about their field of study within a certain period of time. However, only one of the 26 students wrote a summary. When they were asked about this situation, they said that they did not know how to write an abstract. Writing a summary of an academic text is a fundamental issue. Students were not sufficiently informed about this issue.

16. Finding the main idea, subject, cause-effect relationship in the text

In terms of the development of students in Academic Turkish, reading academic texts and making comprehensive evaluations of these texts are extremely important. For this, it is a very important and necessary skill for students to find the topic and main idea of a text, to establish a cause-effect relationship within the text, and to follow the flow of the text. Various activities have been prepared within the scope of many texts for students to find the main idea, subject and cause and effect expressions. It was observed that students could not give correct and sufficient answers to the texts prepared for them. It was determined that they could not write topic and main idea sentences and that they confused these concepts with each other. Finding the topic and main idea of a text shows how well the essence of the text is understood. Therefore, it was seen that students could not use their reading skills effectively and had significant deficiencies in reading.

17. Lack of Academic Perspective in Reading and Writing Texts

The evaluation regarding the use of unnecessary words is also valid for this item. An important finding was achieved regarding the awareness of Academic Turkish before and after the program. When the students were asked before what kind of expectations they had from the program, they did not express that they needed Academic Turkish. However, at the end of the program, students were asked the question "What are your expectations for the next program?" and 40% of the students stated that Academic Turkish is their primary need. It indicates their perspective and level of awareness about Academic Turkish at the beginning. Therefore, the importance of Academic Turkish for students should be primarily emphasized in Academic Turkish courses/seminars.

Academic texts are written according to certain criteria and a certain background. Therefore, they cannot be read, written, and evaluated like a normal text. They are composed of certain forms and there is a certain order among their sections. The opinions put forward are quoted from their authors and are included in the texts in a certain systematic way. On the other hand, an opinion cannot be presented without any proof. It must be based on scientific objectivity. These processes require an academic perspective. All of these processes, together with their reasons, should be shared with students in practice. Forming an academic perspective is among the conditions that must be completed first in writing and reading an academic text.

In this study, it was not aimed to determine the distribution of errors/mistakes and categorize them. Classical grammar classification was not taken into consideration. The researchers categorized the errors/mistakes made by these students at the academic writing level as follows:

Table 1: Categories and subheadings that emerged as a result of errors/mistakes made by students in academic writing

ERROR/INACCURACY TABLE	
PHONETICS	Vocal Harmony/ 2. Misuse of Vocals
MORPHOLOGY	Not using a suffix Affinity suffix, b) Possessive suffix, c) State suffixes (presence), d) Time suffixes Using the wrong suffix Plurality suffix, b) Proximity state suffix, c) –ki suffix, d) Noun construction suffixes, d) Gerund suffixes, e) Past participle suffixes, f) Complementary verb, g) Time affixes, h) Passive voice, i) Conjunctions (complementary ones) Using the wrong word or using the word in the wrong place Conjunctions, b) Other words
SYNTAX	Subject-predicate incompatibility/incompleteness/2. Sentence writing, sentence completion
SEMANTICS	Use of unnecessary words Use of personified expressions incompatible with academic language Carelessness in the use of academic vocabulary/wrong word choice Using vocabulary from native language/5. Summarizing Main idea, cause-effect relationship /7. Quotation/8. Academic point of view/9. Passive Voice
SPELLING AND PUNCTUATION	Spelling Rules Punctuation Marks

In the table above, it can be seen that errors/mistakes are handled under 5 headings. These are phonetics, morphology, syntax, semantics, and spelling and punctuation. The organization of academic writing courses within the framework of these errors/mistakes will play an important role in meeting the expectations and needs of students.

DISCUSSION AND CONCLUSION

Errors/mistakes of international students with Turkish origin on Academic Turkish were evaluated in this study. In this context, students were asked to complete the tasks given to them in written. It was concluded that the students made the following errors/mistakes: Use of affixes in the wrong place / use of wrong affixes / not using affixes, subject-predicate incompatibility, misuse of tense affixes, use of complementary verbs, use of passive structure, use of conjunctions in place, misuse of the word in the wrong place or incorrect use of the word, use of unnecessary words, deficiencies in writing and completing sentences, use of personalized expressions that are incompatible with academic language, carelessness in the use of academic vocabulary/wrong word preferences, using words from native language, spelling and punctuation errors/mistakes, not paying attention to citation rules, summarizing (lack of knowledge on how to write a summary), finding the main idea, subject, cause-effect relationship in the text, lack of academic perspective while reading and writing texts.

Students have significant deficiencies in their writing skills in Academic Turkish. Most of these deficiencies stem from the lack of knowledge and a qualified Academic Turkish education. There is a significant lack of knowledge about what basic features a scientific text should have. YTB has requested Academic Turkish support seminars for these students at universities and foundations supported by YTB. However, it is seen that the subjects that the students need are not sufficiently covered in these Academic Turkish courses. At this point, it is seen that there are important problems such as the lack of a common Academic Turkish program, low qualified instructors who teach Academic Turkish courses, and the lack of materials used for Academic Turkish. Lecturers who teach Academic Turkish courses also state that there are significant deficiencies and problems in terms of

materials (Azizoğlu et al., 2019: 15). In addition, it is also clear that students are not provided with the right and sufficient academic guidance. Hasırcı (2021) also states in his study that students do not feel ready for Academic Turkish and do not have enough knowledge. On the other hand, since students suffer the most from this situation at the end of the process, they have important responsibilities at individual level in terms of completing these gaps. The fact that students do not have sufficient sensitivity and consciousness about Academic Turkish should be addressed as a systematic problem. The similarity and frequency of students' errors in academic writing show that the process is not just about individual errors/mistakes, but that there are problematic areas structurally and as a whole.

Focusing on students' mistakes, it is seen that they have significant deficiencies and problems at their levels before Academic Turkish. For example, suffix errors are the most concrete indicators of this situation. The problem of language structures that are not completed/learned/reinforced before Academic Turkish reappears in Academic Turkish. Lecturers working in the field also mention the deficiencies on this issue and state that these deficiencies indicate an important problem in terms of Academic Turkish (Azizoğlu et al., 2019).

In order to be productive in writing sufficiently reading skills, one of the receptive skills, must be good. When students do not read sufficiently, they cannot produce/write sentences at both conceptual and subject-based levels. In this respect, it is necessary to read sufficiently in order to write good academic texts. Hasırcı (2021) states that 33% of students follow academic journals and 58% follow theses from the thesis page of the Higher Education Institution, but they do not read these journals and theses. It is of great importance that instructors motivate and guide students in this regard. However, students should also show their efforts and discipline. During academic reading, students develop at the conceptual level and implicitly become familiar with academic text types and writing.

When students were given tasks such as completing sentences and writing summaries, it was found that most of them did not perform the relevant tasks. Students do not have sufficient vocabulary and concept knowledge, and they cannot use conjunctions and language structures that will provide transitions among sentences. Even students who had content knowledge related to the writing task stated that they had difficulty in expressing their thoughts fluently in writing. They stated that they had difficulty in building meaning relationships among sentences and paragraphs. In their study, Demiriz and Okur (2019) stated that the most mistakes in academic writing are made in the semantic field. Studies in the literature also support this situation. In Hasırcı's (2021) study on international students' self-efficacy in Academic Turkish, it was stated that students had great difficulty in making connections among paragraphs and lacked knowledge about academic writing.

The instructors who know what the students need in Academic Turkish and make the necessary practices with their students to meet these needs play a central role. The one-on-one studies conducted by the researchers with international students of Turkish origin have been very effective in correcting mistakes/errors. Therefore, the fact that the instructors have the expected qualifications in Academic Turkish and provide one-on-one feedback to the students directly affects the learning process.

It is seen that the mistakes made by international students of Turkish origin are based on common reasons. These evaluations should also be considered as recommendations. Accordingly, the researchers make the following evaluations based on the Academic Turkish programs they conducted with international students:

- ***Transfer of native language features into Turkish and confusion of language structures:*** One of the most common mistakes/errors that students frequently make during writing activities is the use of language structures or words from their native languages in Turkish. Students are mostly unaware of the fact that they misuse the language structures and words they bring from their native language. When students do not know Turkish structures or do not use them sufficiently, they transfer the structures of their native language to Turkish. On the other hand, it is often seen through different ways of using the same structure in

Turkish languages. Students usually make this transfer unconsciously. The problem will be reduced to a great extent if the instructors raise awareness of the students in this process, draw attention to the mistakes/errors made and give frequent feedback to the students' works.

- ***Mistakes in the use of suffixes:*** Turkish is an agglutinative language due to its structure. It is known that students who do not come from an agglutinative language family have problems with the functions and usage of affixes. In addition to a good learning process for the correct use of affixes, it is extremely important for students to make activities to reinforce their writing skills and for instructors to provide the necessary feedback. In the study conducted by Demiriz and Okur (2019: 443) in which student errors related to writing in the context of Academic Turkish were examined, they stated that the second most common error in the papers reviewed was related to morphology. Especially the high number of errors related to the predicate case among the noun conjugation suffixes stands out.

- ***Tendency to write long sentences:*** One of the distinguishing features of academic language from everyday language is that sentences are generally longer in academic language which is expected from students. However, when students do not have enough practice in this regard, they may construct long sentences incorrectly and express what they want to express as they come to mind. Use of a processed language implies a more effective use of a sentence with fewer words. For this purpose, sentences should not be expressed as they come to mind or left as they are written first. Shorter and more accurate words should be preferred in a sentence. Providing students with a perspective and sensitivity within this framework will prevent the emergence of these mistakes.

- ***Inadequate feedback during the learning process:*** In the teaching process, many factors such as high number of students in classes, high course loads, indifference of students, and quality problems may cause insufficient feedback to students. One of the most important parameters of the learning process is to give students frequent feedback on their mistakes/errors. In Hasırcı's (2021) study, it was stated that although international students declared that they had taken courses on writing thesis, they had difficulties in combining the information obtained and needed a unit to supervise their thesis. At this point, it is important to plan the curriculum/system correctly. In addition, the sensitivity of the instructors in giving feedback is also very important in correcting students' mistakes/errors. It is quite normal to have mistakes/errors in the language learning process. The quality of the instructor and the curriculum are effective in finding solutions to students' mistakes/errors. In the studies conducted by the researchers especially with Academic Turkish groups, it has been shown that the one-on-one work between the instructor and student is very effective in correcting mistakes/errors. When the instructor works one-on-one with the student, the instructor focuses directly on the student's errors/mistakes and tries to understand the reasons for them. When the reasons are revealed, the student becomes aware of his/her mistakes/errors and a rapid improvement occurs. It is also important for students to work in a planned and systematic way in order to gain a discipline for academic study. Students should be guided in this process in order to be able to sustain the continuity and use effective ways of learning and correct reading and writing strategies.

- ***Structural deficiencies in writing skills (not enough time, feedback, lack of progress,etc.):*** There may be more than one reason for the mistakes/errors that occur in a teaching process. When the learning process is considered with all its components, it has a complex structure. Taking the necessary precautions by predicting the mistakes made by the students in advance will ensure that the teaching process is planned in a functional way. Students need to encounter enough examples to reinforce, internalize, and apply what they have learned. Students should be able to repeat and apply the subject in its context. Sufficient time is necessary for this. Lecturers working in the field have also stated that

inadequate time is allocated to students for Academic Turkish and it should be increased (Azizoğlu et al. 2019: 16). On the other hand, structures that cannot be fully learned will continue to be a problem. Making arrangements to determine whether the subjects are fully learned will result in a fruitful progress.

- Studies in the literature also show that students do not go through an adequate teaching/learning process. It has been observed that there are problems arising from the students' lack of readiness for this education in terms of their level and command of Turkish. These problems are generally categorized under topics such as spelling and punctuation rules, grammar rules, and inadequacy in academic use of language (Azizoğlu et al. 2019: 14). Demiriz and Okur (2019) also state that the mistakes made are systematically repeated and that measures should be taken by being sensitive to this situation from the very beginning: "When we look at the mistakes made, in addition to the misuse of noun conjugation suffixes, the use of suffixes interchangeably is also encountered. ...Therefore, starting from the beginner level, students can be made to intuit that they should pay attention to phonetics in the use of suffixes. In this way, morphological and phonological information is given in conjunction with each other."

- ***Lack of students' willingness to correct their mistakes:*** Students' own learning cultures closely affect the learning process. Especially their attitudes towards their mistakes/errors are quite decisive in the learning process. It is important for the instructor to be aware of this process and to motivate and guide the students correctly. On the other hand, developing a disciplined and systematic study will ensure that mistakes/errors are corrected over time. Studies on international students also point to the low motivation of students in Academic Turkish. It is also emphasized in the study by Azizoğlu et al. (2019): "The students who received this training stated that their motivation decreased after the academic writing training was made compulsory by the Presidency for Turks Abroad... The low motivation of the students towards academic writing training is explained by the fact that academic writing training was later made compulsory by the Presidency for Turks Abroad for the students who took this course, that they did not consider this course necessary for themselves, and that academic writing is seen as a difficult goal for students with low academic achievement..." (Azizoğlu et al., 2019). Hasırcı (2021: 1721) also emphasizes it in his study: "... in terms of article writing, which is a scientific text, it was concluded that 67% of the students did not write articles in Turkish, did not gain experience in article writing, and considered themselves inadequate in this regard."

- ***Allocation of inadequate time and work for writing and reading strategies and skills:*** Reading and writing skills should be practiced with an academic background/perspective by using the right strategies. For this purpose, it is necessary to carry out one-on-one studies on the texts under the guidance of the instructor and to evaluate the student's work together. For the development of academic skills; it is important to allocate sufficient time, to do the necessary practices. The instructor and student should work together as well. At this point, the quality of

- Academic Turkish books can be structured by prioritizing these problems and areas of sensitivity. Many of the currently used Academic Turkish books do not have distinctive features in terms of their openness to different sensitivities. Those with the features concerned do have a focus on Social Sciences, Science and Health Sciences. Although there are some problems regarding the availability of good quality Academic Turkish (Bakırdöğen, 2022: 68), informative activities and practices that emphasize writing and reading strategies will be much more beneficial for students.

- ***Emphasis should be placed on why students make mistakes:*** When students learn or use a structure incorrectly, it is necessary to give an immediate feedback and make the necessary corrections. If the student does not correct the mistake, the incorrect use may become

permanent. Students' work should be evaluated together with the instructor and the reasons for their mistakes should be discussed. It will help students be aware of their mistakes and use the language more carefully.

- ***Education programs should be structured with a systematic understanding of reading and writing skills that will cover mistakes:*** After students' errors have been identified to a great extent, solutions should be brought to students' writing errors/mistakes by structuring instructional plans that are sensitive to the situation. In cases where students' learning processes are tested and the necessary learning is not achieved, measures should be taken and the teaching process should be carried out with a systematic perspective.

It is seen that the problems that arise in the writing process of international students of Turkish origin in Academic Turkish are largely similar to the problems experienced in teaching Turkish to foreigners and these problems continue. The main problems such as the qualifications of the instructors, the lack of a system in Academic Turkish, the problems related to the quality and availability of materials, and the lack of sufficient and qualified time for the lessons are very similar to the problems identified by Maden et al. (2015) such as the lack of curriculum, the lack of expert instructors, the availability problem of course materials, the differences between Turkish and other languages, and the system and environmental problems in educational environments. In Karagöl and Korkmaz's (2021: 209) study, it is stated that similar problems are also experienced: "Problems such as the lack of a curriculum, the time and duration of the course, the characteristics of the instructor, the materials, the fact that the classes are not organized according to disciplines (social, education, science, medicine), and that the course is/is not compulsory have not been solved yet."

The use of Academic Turkish is at the center of international students' academic processes. However, it is not attached importance fairly in instructional planning. It is not possible to structure the academic productivity of students who do not have an adequate and qualified teaching process, especially for academic writing and reading. Therefore, understanding the importance of the issue and making the necessary arrangements stands in front of the parties to the subject as a requirement. On the other hand, it is not a process that the student can carry out alone. If the process is not managed correctly, it can turn into a loss of time, energy, morale, and work for the student. From this point of view, it is imperative to develop a systematic Academic Turkish course program that is sensitive to students' mistakes, structured in its context, where students are frequently given feedback, and to produce content in this regard. Most importantly, it is/will be effective in solving the problems that arise if the instructors are equipped with the requirements of Academic Turkish, work one-on-one with the students, and provide frequent feedback.

The research has revealed that there is an important need to focus on Academic Turkish courses especially in the undergraduate period. In order to meet these needs of students at the master's and doctoral levels earlier, giving these courses more effectively in universities, determining the competencies of students in this subject and providing education/training according to the needs will enable the process to be carried out in a more fruitful way. It should be ensured that Academic Turkish courses are made compulsory at masters and doctoral levels beyond the undergraduate period. In addition to transferring knowledge in Academic Turkish, the process should be monitored by implementing the information provided effectively. It is hoped that this study, which aims to prevent rather than correct the mistakes made at academic level, will guide the relevant units in evaluating the situation of the students.

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The Effect of The Creative Drama Method on Pre-Service Physical Education Teachers' Classroom Management Self-Efficacy Beliefs and Communication Skills*

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Abstract

This study aimed to reveal the effect of the creative drama method on the communication skills and classroom management self-efficacy beliefs of pre-service physical education teachers. The research group consisted of 47 pre-service physical education teachers (23 in the experimental group, 24 in the control group). The study followed an experimental design with pre-test and post-test control groups. While the experimental group conducted the classroom management lesson with the creative drama method for 10 weeks, the control group conducted it using the traditional method. Classroom management self-efficacy beliefs scale and communication skills scale were applied to the students in the first week before the classes began and in the last week after the classes finished. The study used a one-way analysis of covariance (ANCOVA) to compare the effectiveness of two different methods while keeping the common effect of students' pre-test scores under check. The study results showed that using creative drama as a method in the classroom management lesson positively affects the classroom management self-efficacy beliefs and communication skills of pre-service physical education teachers.

Keywords: Classroom Management, Self-Efficacy, Communication Skills, Drama Method, Pre-Service Teachers

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INTRODUCTION

It is the most important task of the teacher to carry out educational activities and to maintain these activities effectively. Every year, thousands of students graduate from universities to start the teaching profession. These teachers, who have just started their profession, prepare themselves for the teaching profession with the lessons they take in their pre-service education.

Self-efficacy, as postulated by Bandura (1986), is the personal conviction of one's ability to arrange and display the necessary actions to fulfill a specific task within a particular context. This belief system is a crucial cornerstone in the profession of teaching. Teacher self-efficacy includes regulating relationships in the educational process (classroom management competence), as well as active participation in the organizational, political, and social procedures of the institution (representing organizational competence) (Friedman & Kass, 2002). Classroom management, which is a part of teacher self-efficacy, refers to actions taken to create and maintain a learning environment that will help teacher achieve its goals. These actions include organizing the physical space of the classroom, setting rules and procedures, ensuring sustained attention during lessons, and encouraging participation in academic activities (Brophy, 1988). As included in this definition, studies reveal that teachers' ability to manage their classrooms well is related to teachers' self-efficacy beliefs (Babaoğlan & Korkut, 2010; Bayraktar & Çelik, 2021; Yılmaz, 2007). Teachers' classroom management self-efficacy is defined as the ability to control undesirable behaviors, calm down and interfere with students who cause problems, and set up a routine that enables learning activities to proceed with minimal disruption (Aloe et al., 2014).

Another factor affecting teachers' good classroom management is their effective communication skills (Gülbahar & Sıvacı, 2018; Tan & Tan, 2015). According to studies, healthy conduct of classroom communication and interaction plays a significant role in preventing undesirable behaviors and academic achievements of students (Bayraktutan, 2008; Doğruer, 2007; Ekici, 2009).

Communication in the classroom is a versatile flow of knowledge, skills and news between the teacher, the student, the parent and the environment in order to achieve the desired gains (Ünal & Ada, 2003). Communication is important in establishing unity in classroom management. Building unity in the classroom is essential for teaching and is part of teachers' social duties. An effective communication is needed between students and teachers to create this unity (Küçükahmet, 2000). In order to establish healthy relationships with students, a teacher should act sincerely and naturally, use "I" language in the communication process, create a democratic environment, use clear and non-boring language, listen to students effectively, beunderstanding and patient, and use gestures and facial expressions effectively (Olgun, 2005).

Classroom management skills are very important for the success of new teachers and the teaching profession as a whole (Ficarra & Quinn, 2014; Merç & Subaşı, 2015; Sivri & Balcı, 2015).Today's university graduates do not have enough knowledge about classroom management techniques, and the same is true for today's senior teachers and administrators (Tauber, 2007). Many studies in the field of classroom management reveal that students find the education they receive before starting their professional life insufficient and that they do not feel competent in classroom management (Karakoç, 1998; Shamina & Mumthas, 2018; Şentürk & Oral, 2008; Türnüklü, 2000). The reason for this is the disconnection between the lessons given at the university and the applied field experiences (Symons et al., 2020). Studies emphasize that pre-service teachers should be allowed the opportunity to apply theoretical knowledge(Flower et al., 2017; Symons et al., 2020). For this reason, the classroom management lesson, which is included as a lesson in the curriculum of teacher training institutions, should be designed to ensure students' active participation. Student-centered methods such as creative drama should be used to design these processes.

Creative drama is the animation of a subject based on the experiences of the participants by making use of creative drama techniques (Adıgüzel, 2006). Creative drama enables students to participate effectively in teaching processes, express their ideas, learn by experience, increase their

self-efficacy, think critically, and develop their problem-solving, imagination, and communication skills (Adıgüzel et al., 2014). Numerous studies in the literature (Briones et al., 2022; Çayır & Gökbulut, 2015; Hasırcı et al., 2008; Ömeroğlu, 1985; Özyürek, 2020) suggest the use of the creative drama method in the teacher training process.

In this research, constructs that can improve teacher candidates' classroom management self-efficacy beliefs and communication skills are included by using the creative drama method in the classroom management lesson. The study is considered important in that it contributes to the classroom management self-efficacy beliefs and communication skills of pre-service physical education and sports teachers and sets an example for the planning of other theoretical lessons that prepare teacher candidates for the teaching profession so that students can be active.

This study attempts to explain the effect of using creative drama as a method in a classroom management lesson on communication skills and the classroom management self-efficacy beliefs of pre-service physical education and sports teachers. The following are the research questions determined for this purpose:

1. Is there a significant difference between the pre-test mean scores of the students in the experimental and control groups?

2. While keeping the pre-test scores of students' classroom management self-efficacy beliefs under check, is there a significant difference between the post-test scores?

3. While keeping the pre-test scores of the students' communication skills under check, is there a significant difference between the post-test scores?

4. Is there a significant change in classroom management self-efficacy beliefs and communication skill scores after students participated in the classroom management lesson, which was conducted using two different methods?

METHOD

Research model

This study focused on the impact of using creative drama techniques in a classroom management lesson on the communication skills and classroom management self-efficacy beliefs of third-grade students at the Physical Education and Sports Teaching Program, Faculty of Sports Sciences, Ankara University. It applied a true experimental design with pre- and post-test control groups. This method uses random selection to form the experimental and control groups. To test the cause-and-effect relationship, the researchers set up a research environment with dependent, independent and control variables (Karasar, 2016). Ethical approval was obtained for the research by Ankara University Social Sciences Sub-Ethics Committee. Each participate willingly agreed to take part in the study and signed the consent form.

Study group

The sample for the study included 47 pre-service physical education teachers enrolled in the Physical Education and Sports Teaching Program at the Faculty of Sports Sciences, Ankara University, during the fall term of the 2018–2019 academic year. All participants were taking a classroom management lesson. From these students, 23 (10 females [43%], 13 males [56%]) were randomly assigned to the experimental group (EG) and 24 (12 females [50%], 12 males [50%]) to the control group (CG). The age range for the EG was 20-24 years, whereas it was 20-26 years for the CG. Prior to this study, none of the pre-service teachers in either group had undergone any drama training.

Data collection

The study lasted for 12 weeks and was conducted in the Physical Education and Sports Teaching Program's compulsory two-credit classroom management lesson. To collect data in the first week, the researchers applied the Classroom Management Self-Efficacy Beliefs Scale (CMSES) and Communication Skills Scale (CSS) to both the experimental and control groups.

From the second week onward, the classroom management lesson was instructed employing the creative drama method in the EG, while the traditional method was used in the CG. The post-tests were administered at the end of the 12th week. Throughout the research period, the EG's lessons took place in the drama classroom located in the C block of Ankara University's Faculty of Sports Sciences.

Preparation process of the session plans

The researchers prepared three of the ten session plans to introduce the pre-service physical education teachers to drama, having them gain drama experience and get used to each other. The remaining seven sessions followed the creative drama method and covered classroom management lesson topics. In the first three sessions were designed to draw pre-service teachers' attention to classroom management issues and minimize potential problems in actual practice.

The researchers took into account the lesson content for the classroom management lesson of the physical education and sports teaching program at the Faculty of Sports Sciences at Ankara University when planning these sessions.

Before the implementation, an instructor, who is an expert in the field of creative drama, read the session plans prepared by the researcher. The session plans were arranged and finalized in line with criticisms and suggestions from the expert. After the lessons that introduced the concept of creative drama, classroom management lesson subjects were conducted with creative drama activities for the remaining 7 weeks.

Table 1. Weekly Plan of The 12-Week Process of The İmplementation Phase.

Classroom management lesson topics	Week	Subject
Introductory sessions on creative drama	1	Application of pre-tests
	2	Meet-communication-interaction Introduction-communication-interaction
	3	Perception and sensory practices
	4	Role playing and improvisation
Creative drama sessions Classroom management topics	5	Basic concepts of classroom management
	6	Classroom management models and approaches
	7	Classroom rules, routines and discipline
	8	Classroom communication and interaction
	9	Language of communication and types of listening
	10	Management of undesirable behaviours
	11	Role of the teacher in effective education
	12	Administration of post-tests

Data collection tools

Classroom Management Self-Efficacy Beliefs Scale (CMSES) for pre-service teachers

To determine the impact of the applied teaching approach on pre-service teachers' classroom management self-efficacy beliefs, the study used the CMSES. Şaban Çetin developed the scale in 2013, and it consists of the classroom management efficacy belief and outcome expectation sub-dimensions, with a total of 15 items. The study utilized a five-point Likert scale (strongly disagree, disagree, partially agree, largely agree and completely agree), where a score of 5 points indicate high classroom management self-efficacy beliefs and 1 point indicates the same for reverse-coded items. A minimum of 15 points and a maximum of 75 points can be obtained on the scale. The Cronbach's

alpha internal consistency coefficient was 0.73 in this study. It takes about 10 min to complete the scale. In addition to the scale, the study contained general information questions on age and gender and to determine whether or not participants had previous drama education.

Communication Skills Scale (CSS)

The study employed the CSS to determine the effect of the applied teaching method affected pre-service teachers' communication skills. The scale was developed by Owen and Bugay in 2014. The scale used 5-point Likert-type rating (never, rarely, sometimes, often and always) to determine the level of agreement of the items in the scale. The scale has a four-factor structure and 25 items. The factors are communication principles and fundamental skills (CPBS), self-expression (SE), active listening and non-verbal communication (ALNC) and communication willingness (WTC). The scale can provide a minimum of 25 points and a maximum of 125 points. The Cronbach's alpha coefficient for the scale's internal consistency reliability was 0.88 in this study. The scale takes roughly 15 minutes to complete.

Data analysis

For statistical analysis of research data, the Statistical Package for Social Sciences (SPSS) was employed in the study. The fit for the normal distribution was evaluated by computing the skewness and kurtosis values and using analytical methods (Kolmogorov-Smirnov/Shapiro-Wilk tests). The results of the normality analysis revealed that the data were distributed normally throughout the groups.

Since the data were distributed normally, the researcher decided to use parametric tests. The experimental and control groups' pre-test mean scores were compared using an independent sample t-test in the study. General information about the pre- and post-test scores of the groups is presented with mean and standard deviation values. The study used a one-way analysis of covariance (ANCOVA) to compare the effectiveness of two different methods while keeping the common effect of students' pre-test scores under check. Before the covariance analysis, there was an analysis of the covariance assumptions to assure that there was no violation of the normality, linearity and homogeneity of variances and regression curves. The dependent samples t-test was used in the study to determine whether there was a significant change in the students' classroom management self-efficacy beliefs and communication skills scores after their participation in the classroom management lesson, which was taught using two different methods (Pallant, 2020). The study's significance limit was set at $p < 0.05$.

RESULTS

Findings on the first research question

"Is there a significant difference between the pre-test mean scores of the students in the experimental and control groups?"

An independent sample t-test was conducted to compare the pre-test mean scores of students in the experimental and control groups in terms of classroom management self-efficacy beliefs and communication skills.

Table 2. CMSES and CSS Pre-Test Scores and T-Test Results of The Experimental and Control Groups.

	GROUP	*N*	$\bar{x}$	*Ss*	*t*	*df*	*Sig.*	*η2*
CMSES-PRE	Control	24	3.71	.47				
	Experimental	23	3.64	0.31	0.59	45	0.556	-
CSS-PRE	Control	24	4.17	0.38				
	Experimental	23	3.81	0.50	2.73	45	0.009	0.141

CMSES: Classroom Management Self-Efficacy Beliefs Scale

CSS: Communication Skills Scale

Table 2 presents the independent sample t-test analysis results. There is no significant difference between the pre-test mean scores of students' classroom management self-efficacy belief ($t(45) = 0.59$, $p = 0.556$, $p > .05$). Upon examining the scores of the students on the CSS, a significant difference was observed between the pre-test mean scores in favor of the CG($t(45) = 2.73$, $p = 0.009$, $p < 0.05$).

The researchers performed an independent sample t-test to compare the pre-test mean scores of the students in the experimental and control groups for the sub-dimensions of the CMSES and those of the CSS.

Table 3. Pre-Test Scores and T-Test Results of The CMSES and CSS Sub-Dimensions.

	Sub-dimensions	GROUP	*N*	$\bar{x}$	*Ss*	*t*	*df*	*Sig.*	*η2*
	Efficacy belief	Control	24	3.57	0.55				
		Experimental	23	3.56	0.42	0.112	45	0.912	-
CMSES	Outcome expectation	Control	24	3.86	0.52				
		Experimental	23	3.73	0.34	1.00	45	0.322	-
	CPBS	Control	24	4.13	0.38				
		Experimental	23	3.97	0.49	1.23	45	0.225	-
	SE	Control	24	4.26	0.60				
CSS		Experimental	23	3.76	0.74	2.52	45	0.015	0.123
	ALNC	Control	24	4.18	0.55				
		Experimental	23	3.73	0.62	2.61	45	0.012	0.131
	WTC	Control	24	4.10	0.46				
		Experimental	23	3.65	0.54	3.02	45	0.004	0.168

Table 3 presents the results of the t-test analysis. There was no significant difference between the pre-test mean scores of the sub-dimensions of students' classroom management self-efficacy beliefs ($P > 0.05$). Upon examining the scores of the students in the sub-dimensions of the CSS, a significant difference was found between the pre-test mean scores in the other three sub-dimensions in favor of the CG , except for the communication principles and basic skills sub-dimensions. This difference was calculated as $t(45) = 2.52$, $P = .015$, $P < 0.05$ for self-expression, $t(45) = 2.61$, $P = .012$, $P < .05$ for active listening and non-verbal communication and $t(45) = 3.02$, $P = .004$, $P < .05$ for the willingness to communicate sub-dimension.

Findings on the second research question

"While keeping the pre-test scores of the students' classroom management self-efficacy beliefs under check, is there a significant difference between the post-test scores?"

Table 4. Mean ($\bar{X}$) and Standard Deviation (SD) Values for CMSES

Dependent Variables	GROUP	N	Pre-test		Post-test	
			$\bar{x}$	*SD*	$\bar{x}$	*SD*
CMSES	Control	24	3.71	0.47	3.80	0.46
	Experimental	23	3.64	0.31	4.15	0.29
Efficacy belief	Control	24	3.57	0.55	3.65	0.60
	Experimental	23	3.55	0.42	4.08	0.31
Outcome expectation	Control	24	3.86	0.52	3.97	0.41
	Experimental	23	3.73	0.34	4.22	0.39

Table 4 presents values related to the scores obtained from the CMSES before and after implementation. The scores of the EG were more than that of the scores of the CG after implementation. The students taking the classroom management lesson for the first time may be the cause of this increase in the scores. Therefore, it was expected that the mean of the CG would be slightly increased.

Table 5 presents the results of the one-way ANCOVA, which aimed to compare the effectiveness of the two different methods by keeping the pre-test scores of students' classroom management self-efficacy beliefs under check.

Table 5. CMSES ANCOVA Results

Dependent Variable	Group	Winsorized mean	Mean difference (I–J)	*SE*	*F*	*Sig.*	*η2*
	Control (I)	3.78					
CMSES-POST	Experimental (J)	4.17	0.39	0.07	13.37	0.001	0.233
Efficacy Belief	Control	3.65					
	Experimental	4.09	0.44	0.08	13.15	0.001	0.230
Outcome Expectation	Control	3.95					
	Experimental	4.24	0.29	0.08	6.53	0.014	0.129

Table 5 shows that after the review of the pre-implementation scores (pre-test scores), there was a significant difference in favor of the EG in the post-implementation scores of the control and experimental groups in SSPS [$F(1.44) = 13.37$, $P = 0.001$, effect size ($\eta 2$) = 0.233]. Thus, 23.3% of the variance in the dependent variable is determined by the independent variable. According to Cohen's (1988) classification of effect sizes of eta squared values, $\eta 2 \leq 0.01$ indicates small effect size, $\eta 2 \leq 0.06$ indicates medium effect size and $\eta 2 \geq 0.14$ indicates large effect size. Thus, considering the effect size, based on eta squared ($\eta 2$) values, the effect factor of students' classroom management self-efficacy beliefs scores is large.

During the examination of the post-implementation scores, in the sub-dimensions of students' classroom management self-efficacy beliefs, there was a significant difference in favor of the while keeping the joint effect of the pre-test scores under check. Table 5shows that this difference in the efficacy belief sub-dimension is $F(1.44) = 13.15$, $P = 0.001$, and the effect size is large as seen from ($\eta 2$) = 0.230. In the outcome expectation sub-dimension, $F(1.44) = 6.53$, $P = 0.014$, the effect size was medium ($\eta 2$) = 0.129. Thus, the independent variable determines 23% of the variance in the efficacy belief sub-dimension and 12.9% in the outcome expectation sub-dimension. According to the edited post-test scores of the groups, the mean difference is 0.39 in the efficacy belief sub-dimension; it ranges between 0.29 and 0.44 in the sub-dimensions outcome expectation.

Based on the findings in Table 5, the classroom management self-efficacy beliefs and sub-dimensions scores of the pre-service physical education teachers who took the classroom management lesson conducted using the creative drama method were significantly higher than that of teachers who took the lesson taught with the traditional method.

Findings on the third research question

"While keeping the pre-test scores of the students' communication skills under check, is there a significant difference between the post-test scores?"

Table 6 presents values related to the scores obtained from the CSS before and after implementation.

Table 6. Mean ($\bar{X}$) and Standard Deviation (SD) Values for the CSS

Dependent variables	GROUP	N	Pre-test		Post-test	
			$\bar{x}$	*SD*	$\bar{x}$	*SD*
CSS	Control	24	4.17	0.38	3.80	0.46
	Experimental	23	3.81	0.50	4.15	0.29
Communication principles and basic skills (CPBS)	Control	24	4.15	0.38	4.14	0.38
	Experimental	23	3.97	0.49	4.35	0.34
Self-expression (SE)	Control	24	4.26	0.60	4.16	0.59
	Experimental	23	3.76	0.74	4.38	0.50
Active listening and non-verbal communication (ALNC)	Control	24	4.18	0.55	4.04	0.44
	Experimental	23	3.73	0.62	4.38	0.40
Willingness to communicate (WTC)	Control	24	4.10	0.46	4.09	0.51
	Experimental	23	3.65	0.54	4.05	0.60

Table 6 shows that while the scores of the pre-service physical education teachers in the CG for the whole CSS and its sub-dimensions decreased at the end of the term, the scores of teachers in the EG increased. This may be because the traditional teaching method does not develop an environment that allows students to communicate and interact.

Table 7 presents the results of the one-way ANCOVA carried out to compare the effectiveness of the two different methods by keeping the communication skills pre-test scores of the students under control.

Table 7. CSS ANCOVA Results.

Dependent variables	Group	Winsorized mean	Mean difference (I–J)	*SE*	*F*	*Sig.*	*η2*
	Control (I)	4.06					
CSS	Experimental (J)	4.38	0.32	0.06	13.09	0.001	0.229
Communication principles and	Control	4.11					
basic skills	Experimental	4.39	0.28	0.06	10.30	0.002	0.190
Self-expression	Control	4.06					
	Experimental	4.50	0.44	0.09	9.35	0.004	0.175
Active listening and nonverbal	Control	3.98					
communication	Experimental	4.45	0.47	0.08	14.68	0.000	0.250
Willingness to communicate	Control	3.99					
	Experimental	4.15	0.16	0.11	0.909	0.346	0.020

Table 7 shows that after the review of the pre-application scores (pre-test scores), there was a significant difference in favor of the EG in the post-implementation scores of the control and experimental groups in the CSS [$F(1.44) = 13.09$, $P = .001$, effect size ($\eta 2$) = 0.229]. According to Cohen (1988) eta-squared ($\eta 2$) values, this effect is large, which means that the independent variable determines 22.9% of the variance in the dependent variable. Upon examining the edited post-test scores of the groups, the mean difference was 0.32, and it ranged between 0.16 and 0.47 in the sub-dimensions.

According to the results of the one-way ANCOVA, on reviewing the common effect of students' pre-test scores in other sub-dimensions, there was a significant difference in favor of the EG based on the post-application scores, except in the case of the willingness to communicate sub-dimension. Looking at Table 7, the difference in the communication principles and basic skills sub-dimensions was F(1.44) = 10.30, P = 0.002, and the effect size was (η2) = 0.190. The difference in the self-expression sub-dimension was F(1.44) = 9.35, P = 0.004, and the effect size was (η2) = 0.175. The difference in the active listening and non-verbal communication sub-dimension was F(1.44) = 14.68, P = 0.000, and the effect size was (η2) = 0.250. According to Cohen (1988) eta-squared values, the effect size is large in all sub-dimensions. Therefore, the communication principles and basic skills sub-dimensions determine 19% of the variance, the self-expression sub-dimension determines 17.5% and the active listening and non-verbal communication sub-dimension determines 25% of the independent variable. Thus, the communication skills and all sub-dimensions scores of the pre-service physical education teachers who took the classroom management lesson with the creative drama method were significantly higher than that of teachers who took the lesson with the traditional method, except in the willingness to communicate sub-dimension.

Findings on the fourth research question

"Is there a significant change in the classroom management self-efficacy beliefs and communication skill scores after students participated in the classroom management lesson, which was conducted with two different methods?"

Table 8 presents the dependent samples t-test results to determine whether there was a significant change in the classroom management self-efficacy beliefs and communication skills scores after the students participated in the classroom management lesson, which was conducted using two methods.

Table 8. CMSES Pre- and Post-Test Scores Dependent Samples T-Test Results.

GROUP	variables	*N*	$\bar{x}$	*SD*	*t*	*df*	*Sig.*	*η2*
Control	Efficacy belief (Pre)	24	3.57	0.55	-0.733	223	0.471	-
	Efficacy belief (Post)	24	3.65	0.60				
	Outcome expectation (Pre)	24	3.86	0.52	−0.874	223	0.391	-
	Outcome expectation (Post)	24	3.97	0.41				
	CMSES (Pre)	24	3.71	0.47	−0.91	23	0.372	-
	CMSES (Post)	24	3.80	0.46				
Experimental	Efficacy belief (Pre)	23	3.55	0.42	−5.55	222	0.000	0.583
	Efficacy belief (Post)	23	4.08	0.31				
	Outcome expectation (Pre)	23	3.73	0.34	−5.82	222	0.000	0.606
	Outcome expectation (Post)	23	4.22	0.39				
	CMSES (Pre)	23	3.64	0.31	−6.61	22	0.000	0.660
	CMSES (Post)	23	4.15	0.29				

The results presented in Table 8 show that after the comparison of the pre- and post-test scores of the pre-service physical education teachers in the CG, there was no significant difference in the efficacy belief and outcome expectation sub-dimensions of the scale and in the total test scores [(t). (23) = −0.91, P = 0.372, P > 0.05)].

On comparing the pre- and post-test scores of the CMSES of the pre-service physical education teachers in the EG, there was a significant difference in both sub-dimensions and total test scores. This difference in the efficacy belief sub-dimension was t(22) = 5.55, P = 0.000, P < 0.05, and the effect size was (η2) = 0.583; in the outcome expectation sub-dimension it was t(22) = 5.82, P = 0.000, P < 0.05, and the effect size was (η2) = 0.606. The total test scores were t(22) = −6.61, P = 0.000, P < 0.05, and their effect size was (η2) = 0.66.

Considering Cohen (1988) eta-squared (η2) values, the effect size determined has a large effect. That is, using creative drama as a method in classroom management lessons increased students'

efficacy beliefs by 58.3%, their outcome expectation by 60.6% and their total self-efficacy beliefs by 66%. As shown in Table 8, there is a significant increase in the classroom management self-efficacy belief scores in favor of the EG but no significant change in the scores of the CG, for which the traditional method was used.

Table 9 presents the dependent samples t-test results, which was conducted to determine whether there was a significant change in classroom management self-efficacy beliefs and communication skills scores after students participated in the classroom management lesson, conducted using two methods.

Table 9. CSS Pre-Test and Post-Test Scores Dependent Samples T-Test Results.

GROUP Variables		*N*	$\bar{x}$	*SD*	*t*	*df*	*Sig.*	*η2*
Control	Communication principles and basic skills (Pre)	24	4.14	0.38	0.134	23	0.894	-
	Communication principles and basic skills (Post)	24	4.15	0.38	.			
	Self-expression (Pre)	24	4.26	0.60	0.792	23	0.436	-
	Self-expression (Post)	24	4.16	0.59	.			
	Active listening and nonverbal communication (Pre)	24	4.18	0.55	0.232	23	0.230	-
	Active listening and nonverbal communication (Post)	24	4.04	0.44	.			
	Willingness to communicate (Pre)	24	4.10	0.47	062	23	0.951	-
	Willingness to communicate (Post)	24	4.09	0.51				
	CSS (Pre)	24	4.17	0.38	0.54	23	0.596	-
	CSS (Post)	24	4.13	0.36				
Experimental	Communication principles and basic skills (Pre)	23	3.98	0.49	4.23	22	0.000	0.448
	Communication principles and basic skills (Post)	23	4.36	0.34				
	Self-expression (Pre)	23	3.76	0.75	4.97	22	0.000	0.528
	Self-expression Post)	23	4.38	0.50				
	Active listening and non-verbal communication (Pre)	23	3.73	0.62	5.17	22	0.000	0.548
	Active listening and non-verbal communication (Post)	23	4.38	0.40				
	Willingness to communicate (Pre)	23	3.65	0.55	3.83	22	0.001	0.400
	Willingness to communicate (Post)	23	4.05	0.60				
	CSS (Pre)	23	3.81	0.50				
	CSS (Post)	23	4.30	0.29	5.92	22	0.000	0.610

As shown in Table 9, on comparing the pre- and post-implementation communication skills scores of the pre-service physical education teachers in the CG, there was no significant change in the total scores and that of the scale's sub-dimensions [(t(23) = 0.54, P= .596, P > 0.05)].

Upon examining the pre- and post-implementation communication skills scores of the EG participants, there was a significant difference in all sub-dimensions of the scale and the total test scores. This difference in the communication principles and basic skills sub-dimension was t(22) = 4.23, P = .000, P < 0.05, and the effect size was (η2) = 0.448; in the self-expression sub-dimension, it was t(22) = 4.97, P = 0.000, P < 0.05, and the effect size was (η2) = 0.528; in the active listening and non-verbal communication sub-dimension, it was t(22) = 5.17, P = 0.000, P < 0.05, and the effect size

was (η2) = 0.548; in the willingness to communicate sub-dimension, it was t(22) = 3.83, P = .000, P <.05, and the effect size was (η2) = 0.400. The total test scores were t(22) = −5.92, P = .000, P < .05, and the effect size was (η2) = 0.61. Considering Cohen (1988) eta-squared (η2) values, the effect values have a large effect. Thus, using creative drama as a method in the classroom management lesson caused an increase of 44.8%, 52.8%, 54.8%, 40% and 61% in the communication skills sub-dimensions and total post-test scores of the pre-service physical education teachers.

Table 9 shows that there is a statistically significant increase in favor of the EG in the communication skills scores, whereas there is no significant change in the scores of the CG, which used a traditional method.

DISCUSSION, CONCLUSION AND SUGGESTIONS

The purpose of this study was to examine the effect of using creative drama as a method in classroom management lessons on pre-service physical education and sports teachers' communication skills and classroom management self-efficacy. In this direction, 23 of the students were in the EG and 24 in the CG, and the classroom management lesson was taught with the creative drama method in the and with the traditional method in the CG.

CSS and CMSES were applied to the students in the first week before the classes started and in the last week after the classes finished. The study found that the communication skills and classroom management self-efficacy belief scores of the pre-service physical education and sports teachers who took the classroom management lesson with the creative drama method were significantly higher than that of the pre-service physical education and sports teachers who took the lesson with the traditional method. This finding indicates that the creative drama method has an effect on pre-service physical education and sports teachers' communication skills and classroom management self-efficacy beliefs.

When the research findings were examined, it was discovered that the pre-service physical education and sports teachers who took the classroom management lesson using the drama method had significantly higher classroom management self-efficacy beliefs than the pre-service physical education and sports teachers who took the lesson using the traditional method. This finding shows that using the creative drama method to teach the classroom management lesson is considerably beneficial in increasing students' classroom management self-efficacy beliefs.

Researchers found that drama-based professional development programs boost teachers' self-efficacy belief, which is consistent with the findings of this study (Cawthon & Dawson, 2009; Lee et al., 2013; Stanton et al., 2018). Lee et al. (2013) investigated the effect of a drama-based teaching model on teachers' self-efficacy perceptions and revealed that the model affected teachers' self-efficacy perceptions positively. Similarly, Stanton et al. (2018) investigated the effect of year-long drama-based instruction on teachers' self-efficacy and concluded that drama-based instruction had a positive effect on teachers' self-efficacy. Çayır and Gökbulut (2015), in their study on personal development from teacher competencies with creative drama method, stated that pre-service lessons in the teacher training process should include the problems that pre-service teachers will encounter when they enter the field and suggestions for solutions to these problems. In addition, it was emphasized that the content of such lessons should be planned in a way to keep pre-service teachers active. They stated that with the creative drama method, pre-service teachers had the opportunity to experience the problems they might encounter in the profession through role-playing, they produced solutions to the problems they might encounter, and thus they felt more prepared and their belief in their ability to overcome the problems they might encounter increased. Teachers' self-efficacy beliefs and classroom management skills have a positive relationship. This relationship is in line with the increase in classroom management skills as teacher self-efficacy increases (Bayraktar & Çelik, 2021). New teachers, who are expected to learn classroom management skills on the job after starting the teaching profession, feel lonely and uneasy (Tauber, 2007). In fact, these teachers spend most of their energies on classroom management (Demirtaş, 2011). For this reason, practice-based research that can further

improve the classroom management skills of teacher candidates in pre-service teacher education is considered important. Klopfer (2014), who conducted such research, emphasizes the positive effect of the classroom management lesson, which includes simulated classroom scenarios, on pre-service teachers' self-efficacy, teaching style, feelings and reactions towards children, and their use of classroom management strategies. A practice-based study on classroom management was also carried out by Aydin and Karabay (2020) and it was revealed in the research that the "Classroom Management Education Program" enabled preschool teachers to be more successful in problem-solving, preventing undesirable behaviors, classroom management and discipline practice.

The communication skills scores of pre-service physical education and sports teachers who took the classroom management lesson using the drama method were significantly higher than the scores of pre-service physical education and sports teachers who took the lesson using the traditional method, according to this study. This research demonstrates that using the creative drama method to teach the classroom management lesson is significantly effective in improving students' communication skills. In education, the creative drama method is widely used to develop communication skills (Erdem, 2021).

When the literature is reviewed, it is seen that creative drama is an effective method in improving the communication skills of teacher candidates (Arslan et al., 2010; Dere, 2019; Şengül & Ünal, 2018). Creative drama includes many elements of communication (such as empathy, respect, acceptance, verbal and non-verbal speech, gestures and facial expressions, and body language). Drama enables individuals to become aware of their feelings, thoughts, and their own characteristics through interaction and communication activities. This awareness leads people to understand and accept other people (Üstündağ, 2010). Şengül and Ünal (2018) concluded that the creative drama method improved the dimensions of communication skills, communication principles and basic skills, self-expression, active listening, nonverbal communication, and willingness to communicate in their study on improving the communication skills of pre-service teachers. Supporting the findings of this study, Dere (2019) determined that after 12 weeks of drama training, teacher candidates' scores on the CSS increased. Afacan and Turan (2012) used the creative drama approach to assess pre-service science teachers' communication skills, the factors they focused on in communication, and the priority they placed on communication. According to the findings of the research, the creative drama method is effective in improving teacher candidates' communication skills, determining the factors they pay attention to in communication, and teaching communication problems.

In this research, the classroom management lesson was taught with the creative drama method. In the lessons, pre-service physical education and sports teachers were provided with the opportunity to confront the undesirable student behaviors they may encounter when they start the teaching profession, to produce solutions on how to deal with such undesirable student behaviors, and to animate teacher and student behaviors in different classroom management approaches and models. In addition, activities about the communication skills that teachers should have and how effective these skills are in managing their classrooms are also included in the lessons. Thus, with this method, pre-service teachers had the opportunity to practice and experience the theoretical subjects of the classroom management lesson. After all these practices, it was concluded in the research that both the communication skills and classroom management self-efficacy beliefs of pre-service physical education and sports teachers increased.

According to the results of this study; in theoretical lessons such as classroom management in teacher education, the creative drama method can be used to create learning environments in which students will actively participate in the process and learn through their actions and experiences. Thus, pre-service teachers will prepare themselves for the profession with theory-based practices in the classroom management lesson and their self-belief in overcoming the problems they may encounter will increase. In addition, creative drama-based practices can be planned to support in-service teachers' communication skills and classroom management self-efficacy beliefs. It is recommended that the trainers who will plan these training processes take creative drama training. In addition to the positive results, this study has some limitations. The number of sessions on classroom management topics can

be increased. In addition, qualitative data can be collected from pre-service teachers to support the aims of the research.

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Investigation of the Relationship Between Perceptions of Self-Efficacy and Occupational Anxiety of Prospective Physical Education Teachers

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Abstract

This study aims to examine the relationship between perceptions of self-efficacy and occupational anxiety of prospective physical education teachers. For this purpose, a total of 140 prospective physical education teachers, 55 females and 85 males, who were studying in physical education and sports teaching departments and who voluntarily agreed to participate in the study, participated in the study. The self-efficacy scale, which was developed by Tschannen-Moran and Hoy and examined for validity and reliability by Çapa et al., and Occupational Anxiety Scale for Physical Education Teachers, which was developed by McCormack and validity and examined for reliability by Özer et al., were conducted with the prospective physical education teachers. According to the findings obtained in the study, significant differences were determined in the variables of self-efficacy status, gender and doing licensed sports, while no significant difference was determined according to the variable of choosing the physical education teaching department. Moreover, it was determined that there was a moderate correlation between self-efficacy and occupational anxiety.

Keywords: Physical Education, Self-efficacy, Occupational Anxiety

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INTRODUCTION

The concept of physical education is defined as an educational activity that consists of physical movements such as sports and games and aims to develop individuals through physical activities (Açak, 2006). In primary and secondary schools, physical education teachers organize many activities to contribute to the socialization of young people. To become a teacher in Turkey, it is necessary to be successful in the qualification exam. In addition to being successful in this exam, it is a fact that prospective teachers experience concerns about whether they consider themselves sufficient for the teaching profession.

According to Wood and Bandura (1977), who presented the concept of self-efficacy within cognitive theory, self-efficacy depends on the individual's belief that he/she will overcome and succeed in every situation and that his/her capacity is sufficient. Self-efficacy is related to individuals' beliefs in their motivation, cognitive resources and abilities to activate the actions necessary to gain control over the events in their lives. To be successful in a given task, a person must have the necessary abilities (Wood & Bandura, 1989).

The concept of self-efficacy is used especially in educational processes to combat stress in teachers and students, to predict teachers' behaviors related to teaching duties and responsibilities, and to explain individual differences in teaching activities in the field of education (Yılmaz et al., 2004). For this reason, self-efficacy has been one of the important fields of study, especially for experts working in the field of teacher education (Morgil et al., 2004). Among the factors that are considered necessary for and affect quality education, teacher self-efficacy gains great importance in parallel with their responsibilities in the effort of continuous self-renewal and development.

The concept of self-efficacy, which Albert Bandura emphasized in his social learning theory and which constitutes the center of this theory, is expressed as "the individual's belief in his/her capacity to organize and successfully perform the necessary activity to exhibit a certain performance" (Bandura, 1997; Goddard, 2004; Çakan, 2004). Educational researchers conducted many studies on teacher training, which is one of the most important issues to be investigated in the education system, with the help of constantly advancing and developing science and technology (Lewitt, 2001; Colodarci, 1992; Czerniak, 1996; Tschannen-Moran, 2001; Chan, 2008). In light of these studies, developments in the field of education have brought the needs of societies for educated manpower to the forefront, and as a result of this situation, having qualified manpower is included in the education policies of all countries of the world. With this result, the education system and teacher training programs of Turkey have been reviewed in recent years. Numerous studies were also conducted by educational experts to provide better education and to train more qualified and adequately equipped teachers (Üstüner et al. 2009; Çakır, 2006; Erdem, 2008; Akbulut, 2006; Kahyaoglu, 2007).

Teacher Self-Efficacy

Tschannen-Moran and Woolfolk Hoy (2001) define teacher self-efficacy as a teacher's judgment about whether or not he/she can produce desired outcomes such as student engagement and learning with the skills he/she possesses. In general terms, teacher self-efficacy is a teacher's belief in his/her ability to produce desired outcomes such as interest and learning, even with unmotivated and difficult students. The decisions taken towards the constructivist approach in the education system revealed the need to increase teachers' self-efficacy beliefs in the teaching methods used during the lesson and in classroom management to create an effective teaching environment (Çandar & Şahin, 2013).

In particular, the main reasons affecting teacher self-efficacy are students' aspirations, their emotional competence and their desire to succeed (Caprara, 2006; Schunk, 1996). Teacher self-efficacy is an important factor that directly affects the quality of education (Chan, 2008). Teachers' actions and behaviors depend on their beliefs, feelings, thoughts and aspirations (Chacon, 2005). Increasing student motivation (Midgley et al., 1989) and developing students' sense of efficacy

(Ashton & Webb, 1986; Moore Esselman, 1992; Ross, 1992; Anderson, Grene, & Loewen, 1988) are among the factors affecting teacher self-efficacy. Some of the factors affecting the self-efficacy of prospective teachers are gender, the level of teaching, preschool experiences, and experience with anxiety encountered during the teaching profession (Lin & Gorrell, 2001; Woolfolk Hoy & Spero, 2005; Ashton & Webb, 1986; Coladarci & Breton, 1997; Gibson & Dembo, 1984; Guskey, 1988; Hoy & Woolfolk, 1990; Woolfolk Hoy, 2015). In task-specific efficacy, self-efficacy belief can be defined in relation to a task. For example, a person who encounters a movement in a physical education class is expected to examine this movement and put it into practice by using his/her skills. In other words, to determine task-specific efficacy beliefs, they should be examined on tasks (Varol, 2007). Considering the literature, the existence of a positive or negative relationship between teachers' self-efficacy and their occupational anxiety is discussed. Therefore, the current study attempts to help explain the relationship between teachers' self-efficacy perceptions and their occupational anxiety.

Occupational Anxiety

When the concept of anxiety is mentioned, negative situations come to mind first. However, anxiety does not always create negative situations. If anxiety is at a moderate level, it can also create positive situations. Anxiety has a negative effect on a person's performance in a difficult and complex task (Cüceloğlu, 2016).

Teachers take an active role in the education system and assume various responsibilities towards the school administration, students and their families. However, teachers' responsibilities do not end with these; they are also responsible for developing and renewing their skills and working to increase their qualifications in their professional life with the rapid changes in education (Özer et al., 2009; Craft, 2002). In this context, teachers inevitably experience some concerns about their professional lives. These professional concerns consist of disciplinary issues, students' motivation, individual differences, learning students' learning problems, their self-efficacy, extracurricular tasks, crowded classrooms, the inadequacy of teaching materials and difficulties encountered while implementing the curriculum (McCormack, 1996; Meek & Behets, 1999; Taşmektepligil, Yılmaz, Osman, & Kılcıgil, 2006; Özer et al., 2009). These researchers identified a wide variety of types of anxiety, ranging from survival anxiety as a teacher, to fulfilling the requirements of teaching duties, to having a positive impact on students' learning, and in a more general sense, to improving the education system. The literature also identifies a large number of personal and contextual variables that are influential in the formation of teaching-related anxieties. These variables include past school experiences (Bullough, 1990; Calderhead & Roboson, 1991; Zahorik, 1989) and general teaching experiences (Fuller & Brown, 1975). Similarly, teacher self-efficacy has been widely discussed by numerous researchers (Ashton & Webb, 1986; Coladarci & Breton, 1997; Gibson & Dembo, 1984; Guskey, 1988; Capel, 2001; Ghaith & Shaaban, 1999; Morton et al., 1997).

To date, researchers have drawn attention to the practices in teachers' professional lives (Fuller, 1969; Guillaum & Rudney, 1993; Pigge & Marso, 1997). Fuller (1969) defines anxiety for teachers as their own "competence" in relation to teaching and maintaining their competence and existence in school life, secondly, "duty and responsibility" in relation to managing their daily tasks within the curriculum, and finally, "influence" in relation to their ability to meet the individual needs of students in the learning process with their individual differences. While teachers are practicing their profession and fulfilling their duties and responsibilities, having the belief that they can do these is as important as their professional knowledge and equipment. For this reason, the concept of self-efficacy belief, which expresses one's belief in oneself in terms of success, is of great importance for teachers and prospective teachers (Semiz, 2019).

Within this framework, the current study aims to determine the level of relationship between self-efficacy and occupational anxiety of prospective physical education teachers and to evaluate the self-efficacy and occupational anxiety of prospective physical education teachers according to these independent variables.

MATERIAL AND METHOD

Population and Sample

The population of the study consisted of a total of 140 4th-grade students studying in the physical education and sports teaching departments in Faculties of Sports Sciences of Çanakkale Onsekiz Mart University, İnönü University, Fırat University, Recep Tayyip Erdoğan University and Kahramanmaraş Sütçü İmam University in 2021-2022 academic period. The sample of the study consisted of 55 females and 85 males who voluntarily agreed to participate in the study.

Data Collection Tool

Socio-demographic data collection form: this form, which was developed by the researcher and filled out by the respondents, covers questions about gender, whether the participant is a licensed athlete, whether the participant chose the physical education department willingly or not, and the type of high school the participant graduated from. The teacher self-efficacy scale used in the study was developed by Tschannen-Moran and Hoy (2001) while the validity and reliability study for Turkish culture was conducted by Çapa, Çakıroğlu and Sarıkaya (2005). The self-efficacy scale consists of 24 items and three subscales. As a result of the reliability study conducted by Çapa et al., Cronbach's alpha internal consistency coefficient of the scale was found to be "0.82" for the subscale of ensuring student participation, "0.84" for the subscale of classroom management, "0.86" for the subscale of teaching strategies and "0.93" for the whole scale. The first subscale called "ensuring student participation" consists of items related to the extent to which teachers can make students believe that they can do school activities well. The second subscale called "classroom management" is related to the extent to which teachers can control unwanted behaviors in the classroom. The third subscale called "teaching strategies" consists of items related to the extent to which teachers can use different assessment strategies. The lowest score that can be obtained from the scale is 24 while the highest score is 120.

The Anxiety Scale for Physical Education Teachers, which was developed by McCormack (1996) and adapted for Turkish culture by Özer, Şad, Açak, and Kafkas (2009), was used to evaluate the occupational anxiety of prospective physical education teachers. As a result of the reliability study conducted by Özer et al., the Cronbach Alpha internal consistency coefficient of the scale was found to be "0.70" for the subscale of Anxiety Related to Teacher's Self, "0.069" for the subscale of Anxiety Related to Duties and Responsibilities, "0.71" for the subscale of Anxiety Related to the Impact on Students and "0.70" for the whole scale. The first subscale called "Anxiety Related to the Teacher's Self" consists of items related to teachers' self-beliefs and competencies. The second subscale called "Anxiety about Duties and Responsibilities" is related to teachers' duties and responsibilities in school life. The third subscale, called "Anxiety about the Impact on Students", consists of items related to teachers' attitudes toward students' various learning difficulties. This scale is a 5-point Likert scale consisting of 13 items and three subscales. The lowest score that can be obtained from the scale is 13 while the highest score is 65.

Data Analysis

In this study, descriptive statistics calculations were conducted for the independent variables in the first part of the data collection tools while evaluating the data obtained. Since the variances confirmed the homogeneity tests, a t-test and One-Way Analysis of Variance (ANOVA) were performed to determine whether the participants' responses differed according to the independent variables and an LSD test was performed to determine the difference between groups. Moreover, correlation analysis was conducted to determine the level of relationship between self-efficacy perceptions and occupational anxiety of prospective physical education teachers.

FINDINGS

The findings of the study were analyzed according to each independent variable.

Table 1. Self-efficacy and Occupational Anxiety of Physical Education Teacher Candidates in Terms of Gender Variables

Self-Efficacy Perception	Gender	N	X	S	t	p
Ensuring Student Engagement	Female	55	29.42	5.37	-4.023	0.00
	Male	85	31.90	4.87		
Teaching Strategies	Female	55	29.06	4.33	-3.757	0.00
	Male	85	32.38	4.26		
Classroom Management	Female	55	29.88	5.12	-3.349	0.00
	Male	85	31,82	4.22		
Total	Female	55	84.36	14.86	-4.193	0.00
	Male	85	96.10	13.25		
Occupational Anxiety						
Anxiety Related to Teacher's Self	Female	55	12,02	5.47	-2.362	0.23
	Male	85	14,65	2.42		
Anxiety Related to Duties and Responsibilities	Female	55	13,44	3.62	-1.982	0.142
	Male	85	13,88	4.79		
Anxiety Related to the Impact on Students	Female	55	16,32	4.64	0.162	0.871
	Male	85	16,58	3.90		
Total	Female	55	41.78	10.82	-2.642	0.42
	Male	85	45.11	8.94		

* $p<0.05$

When Table 1 is examined, it is observed that there is a significant difference between the self-efficacy perceptions of female and male prospective physical education teachers in favor of male prospective teachers according to the gender variable. It is observed that there is a significant difference in favor of male prospective physical education teachers in terms of prospective physical education teachers' occupational anxiety, both in the subscale of anxiety related to the teacher's self and in the total scores of the scale.

Table 2. Self-efficacy and Occupational Anxiety of Prospective Physical Education Teachers in Terms of Licensed Sports Playing Variable

Self-Efficacy Perception	Licensed Athlete	N	X	S	t	p
Ensuring Student Participation	Yes	46	31.50	4.72	2.994	0.003*
	No	94	27.44	4.22		
Teaching Strategies	Yes	46	31.68	4.94	2.438	0.012*
	No	94	28.73	4.46		
Classroom Management	Yes	46	31.98	4.77	2.582	0.036*
	No	94	28.52	5.39		
Total	Yes	46	95.16	12.09	2.874	0.014*
	No	94	84.68	13.48		
Occupational Anxiety						
Anxiety Related to Teacher's Self	Yes	94	15.54	3.27	2.264	0.045*
	No	46	12.47	3.87		
Anxiety Related to Duties and Responsibilities	Yes	94	13.88	3.92	-1.835	0.203
	No	46	13.20	4.46		
Anxiety Related to the Impact on Students	Yes	94	16.96	3.88	2.351	0.041*
	No	46	16.11	4.74		
Total	Yes	94	46.38	8.87	1.879	0.039*
	No	46	41.78	9.38		

* $p<0.05$

When Table 2 is examined, it is observed that there is a significant difference in all subscales and total of the self-efficacy perceptions scale of prospective physical education teachers in favor of those who do licensed sports. Except for the subscale of anxiety related to duties and responsibilities in

the scale of prospective physical education teachers' occupational anxiety, it is observed that there is a significant difference in favor of licensed athletes.

Table 3. Analyses of Prospective Physical Education Teachers' Self-Efficacy Perceptions and Occupational Anxiety According to the Variable of Wanting Physical Education Department

Self-Efficacy Perceptions	Wanting Physical Education	N	X	S	t	p
Ensuring Student Participation	Yes	122	29.34	5.77	0.464	0.533
	No	18	29.12	7.52		
Teaching Strategies	Yes	122	32.49	4.96	0.877	0.647
	No	18	30.62	5.54		
Classroom Management	Yes	122	31.38	5.58	0.919	0.693
	No	18	30.99	7.22		
Total	Yes	122	93.21	12.15	0.655	0.542
	No	18	90.73	17.47		
Occupational Anxiety						
Anxiety Related to Teacher's Self	Yes	18	13.62	3.44	-0.726	0.498
	No	122	13.74	2.48		
Anxiety Related to Duties and Responsibilities	Yes	18	13.44	3.67	-0.552	0.528
	No	122	13.54	3.73		
Anxiety Related to Impact on Students	Yes	18	16.49	4.44	-0.826	0.484
	No	122	17.57	4.65		
Total	Yes	18	43.55	8.33	-0.827	0.365
	No	122	44.88	8.43		

* $p<0.05$

When Table 3 is examined, it is observed that both the self-efficacy perceptions scale and the occupational anxiety scale do not differ significantly for both the subscales and the overall scales according to the variable of the prospective teachers' preferences for the physical education department.

Table 4: Correlations of Prospective Physical Education Teachers' Self-Efficacy Perceptions and Occupational Anxiety

Subscales	1.	2.	3.	4.	5.	6.	7.	8.
Ensuring Student Participation	1							
Teaching Strategies	0.623**	1						
Classroom Management	0.644*	0.684**	1					
Total Self-Efficacy	0.865**	0.838**	0.881**	1				
Anxiety Related to Teacher's Self	0.188*	0.166*	0.244*	0.221*	1			
Anxiety Related to Duties and Responsibilities	0.212*	0.177*	0.214*	0.242*	0.367**	1		
Anxiety Related to Impact on Students	0.083	0.192*	0.231*	0.163*	0.514*	0.467*	1	
Total Anxiety	0.194*	0.254*	0.243*	0.285*	0.737**	0.782**	0.854**	1

* $p<0.05$, ** $p<0.01$

When Table 4 is examined, according to the correlation between self-efficacy perceptions of prospective physical education teachers and their occupational anxiety, it is seen that there is a low-level positive correlation (r=0.285) between the total scores of prospective physical education teachers from the self-efficacy scale and the total scores from the occupational anxiety scale. It is seen that there is a low-level correlation (r=0.188) in the positive aspect between the scores of prospective physical education teachers from the "ensuring student participation" subscale of the self-efficacy scale and the scores from the " Anxiety Related to Teacher's Self" subscale of the occupational anxiety scale. It is seen that there is a low-level correlation (r=0.177) in the positive aspect between the scores of prospective physical education teachers on the "ensuring student participation" subscale of the self-efficacy scale and the scores on the "Anxiety Related to Duties and Responsibilities" subscale of the occupational anxiety scale. It is seen that there is a low positive correlation (r=0.194)

between the scores obtained from the ensuring student engagement subscale of the prospective physical education teacher self-efficacy scale and the scores obtained from the anxiety related to duties and responsibilities subscale of the occupational anxiety scale.

DISCUSSION

It is thought that academic achievement and vocational competence affect the acquisition of a profession and the current state of anxiety. For these reasons, this study aims to reveal the current status of students' academic self-efficacy and occupational anxiety levels and to reveal the level of the relationship between academic self-efficacy and occupational anxiety. In light of the findings obtained in the current study, it is seen that there is a significant difference in favor of male prospective teachers in the perceptions of prospective teachers about their self-efficacy according to the gender variable. Additionally, there is a significant difference in favor of male prospective teachers in the occupational anxiety status of prospective physical education teachers in the occupational anxiety status of prospective physical education teachers and the subscale of anxiety related to the teacher's self and total scores of the scale. Certain studies aiming to determine the self-efficacy levels of teachers (Kahyaoğlu and Yangın, 2007; Üstüner et al., 2009; Çimen, 2007; Altun & Yazıcı, 2012; Çuhadar, Gündüz & Tanyeri, 2013; Alemdağ, 2015; Oğuz, 2009) did not find a significant difference between academic self-efficacy and gender variable. However, findings of other studies (Mirzeoğlu et al., 2007; Izgar & Dilmaç, 2008; Türk, 2009; Durdukoca, 2010) demonstrated that male teachers' self-efficacy perceptions are higher than female teachers. In a study conducted by Taşğın (2007) on students studying in physical education and sports teaching departments, it is seen that female prospective teachers have higher anxiety levels compared to male prospective teachers, which is contrary to the findings of the current study.

In the current study, it is determined that there is a significant difference in the self-efficacy status of prospective teachers according to the variable of licensed sports status in all subscales and total scores, except for the scores in anxiety related to duties and responsibilities, which a subscale of occupational anxiety status, where there is a significant difference in the subscales of ensuring student participation, teaching strategies and total scores. Kafkas et al. (2010) reported the same result as our study in the self-efficacy dimension of undergraduate students but did not find a significant difference in the occupational anxiety dimension. In a study conducted by Taşğın (2007), it was determined that occupational anxiety did not differ according to the sports branch. In the study, no significant difference was found in the total and subscale scores of both self-efficacy and occupational anxiety according to the variable of wanting to study physical education. According to the results explained above, it is seen that prospective physical education teachers who were previously licensed athletes consider themselves more competent. This result can be explained by the fact that prospective physical education teachers think that their active participation in sports during or before school life will positively affect their self-efficacy in their professional lives.

When the scores of prospective physical education teachers from self-efficacy and occupational anxiety scales are examined, it is seen that there is a low level of positive correlation between the total scores of prospective physical education teachers from the self-efficacy scale and the total scores from the occupational anxiety scale. This finding obtained as a result of the current study shows that the self-efficacy scores of prospective physical education teachers and their occupational anxiety are related to each other, albeit at a low level. In other words, we can say that as the self-efficacy scores of prospective physical education teachers increase, their occupational anxiety scores decrease. When the literature is examined, it can be observed that when anxiety is well managed, it helps the individual to work harder to be successful and to take precautions against the negative events to be experienced (Akgün, Gönen & Aydın., 2007). Within this context, attention should be paid to the use of anxiety as a motivating and mobilizing stimulus that develops a positive attitude toward the profession. These definitions in the literature support the current study.

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Ismayıl Hakkı Baltacıoğlu's Vision for Painting Education for Young People in the Ottoman Period

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Abstract

In this study, it was aimed to reveal the views of Ismayıl Hakkı, who was one of the important educators of the Ottoman period, on the teaching of painting and to evaluate his views in terms of today's painting education. The study was based on the documents written by Ismayıl Hakkı on the teaching of painting. These documents are his two different articles named "Resim Öğretmenin Yolu (The Way of Teaching Painting)" published in 1913 and the work "Resmin Usul-i Tedrisi (Teaching Methods of Painting)" published in 1915. The historical research method was used in the study. Historical research allows to learn and understand the events that took place in the past and to comprehend that the events that are taking place today, the situations that have arisen, and the existing views actually have a historical process. Since historical studies are based on documents belonging to the period, descriptive approach was preferred for data analysis in the study. The aim of the descriptive approach is to present the obtained data to the reader by staying as faithful as possible to their original form.

Keywords: Ismayıl Hakkı, Painting Education, Painting Teaching Methods

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INTRODUCTION

The Ottoman education and training structure can be divided into two as the classical period and the modern period. In the classical period of the Ottoman Empire, primary school education was provided in non-state institutions called sıbyan mekteb (Ottoman primary school). In fact, sıbyan mektebs were not exactly primary schools, but rather Qur'an courses. In the modernization process that started with Mahmud II, education was also emphasized and modern civil schools began to be opened. In particular, rüşdiye (secondary schools) that started to be opened after 1839 are remarkable. The reflection of the modernization movement in education initiated by Mahmud II to primary schools began to take place with the Statute on General Education (Maarif-i Umumiye Nizamnamesi), which was issued in 1869. As required by law, the structure of primary schools managed by foundations was not touched, however, it was planned to open modern sıbyan mektebs affiliated to the state. In 1872, a primary school teaching with new methods was opened for the first time in Istanbul. What is meant by the new method was to change the course, tools and materials used[1] and to introduce new teaching methods that could make learning easier (Akyüz, 2013). This change can be considered as a reflection of the desire to modernize, that emerged for the purpose of strengthening due to the weakening of the Ottoman Empire. In the Ottoman Empire, the level that we can call as the primary education in the modern sense was exactly shaped in the XIX century. Thus, two terms for primary school emerged in the Ottoman Empire, which were sıbyan mektebs teaching with old methods and ibtidai mektebs teaching new methods. An important difference of sıbyan mektebs from ibtidai mektebs is that the concept of primary school was revealed in a close sense to the present day. Indeed, while the Qur'an and religion were taught in sıbyan mektebs, courses such as history and geography were included in the curriculum in ibtidai mektebs (Akyüz, 2013; Alp, 2016; Batır, 2014; Demirel, 2002; Nurdoğan, 2016; Vurgun & Engin, 2019). The painting course was included in the primary school curriculum after the Second Constitutional Era (Ismayıl Hakkı, 1331).

An important law issued for the organization of primary education in the Ottoman Empire was Provisional Law on Primary Education (Tedrisat-ı İbtidaiye Kanun-ı Muvakkati), which was enacted in 1913. As required by the law, rüşdiye schools referring to secondary school and ibtidai schools referring to primary school were merged, and the primary education level was established in the Ottoman Empire (Tedrisat-ı İbtidaiye Kanun-ı Muvakkati, 1329).

During the XIX century, education and training activities in the Ottoman Empire were modernized rapidly. In this century, modern schools were opened by the state and new methods began to be applied in teaching methods. Teachers' Training School for Boys (Darülmuallimin), which was an independent teacher's training school, was opened for the first time in 1848 in order to educate individuals who knew modern techniques for the modern schools opened. In the following years, the number of teacher's training school was increased, teacher's training schools for girls were opened and teacher's training schools were expanded in the Ottoman geography. The opening of teacher's training schools was parallel with the desire to learn, teach and develop modern teaching techniques. Furthermore, the XIX century Ottoman period can be defined as a period during which educators worked on teaching methods and it was attempted to make these works widespread in schools. While the state was opening schools, preparing curricula and enacting laws in order to renew education, the Ottoman educators began to publish articles and books about teaching methods, and a process that had a positive effect on Ottoman education was initiated (Akyüz, 2013; Becerikli, 2019; Becerikli & Demirel, 2017; Dumanoğlu, 2019; Erdem, 2013; Oruç & Kırpık, 2006; Kırpık & Oruç, 2006; Kodaman, 1999; Öztürk, 1998; Şanal, 2002; Ünal & Birbudak, 2013).

[1] The renewal of course equipment was the inclusion of materials such as student desk, blackboard, chalk, map and earth globe, teacher's stand in primary schools in the Ottoman Empire. Indeed, students sit on cushions on the floor and did not use other tools in sıbyan mektebs, which prevented the facilitation of teaching (Akyüz, 2013).

One of the most important Ottoman educators was Ismayıl Hakkı (Baltacıoğlu) Bey [2]. Ismayıl Hakkı, like other educators, conducted various studies on how to provide better education and produced works. While he was working as a teacher in the teacher's training school, he attempted to ensure that preservice teachers would comprehend the methods he knew about how to make teaching better. Ismayıl Hakkı, who wrote his views on how teaching should be done, also conducted significant studies on painting (Ata, 2000; Baltacıoğlu, 1998; Demir, 2018; Dikici & Tezci, 2002; Giorgetti, 2008; Kolçak, 1968; Obuz, 2015; Tozlu, 1989).

While Ismayıl Hakkı was working as a teacher in İstanbul Teachers' Training School for Boys, he was sent to Europe to conduct research on pedagogy and handicraft teaching in Europe, mainly the center of France upon the request of the principal of the school from the ministry of education. Ismayıl Hakkı had contacts in France, England, Belgium, Switzerland and Germany in Europe. He was influenced by the painting studies of a primary school he visited during his trip to Germany, and his observations in this school, with his own words, constitute the basis of his views on his "personal and creative method in the teaching of painting". When he returned to the country, he took on the duty of course overseer in the teachers' training school for boys. Thus, he had the authority to how the courses were taught. With the authority provided by his duty, he was a pioneer in the application of the modern techniques he had learned in the paintings to be made in the teachers' training school. He entered into deep research in order to be able to write better what he had learned about the teaching of painting in Europe, and he collected various sources and wrote his first articles on the subject called " The Way of Teaching Painting". His articles were published in the journal Yeni Fikir in July 1913 and August 1913. Then, upon the request of the Ministry of Education, he published his work titled "Teaching Methods of Painting" by expanding the aforementioned articles. This work was published by the ministry of education and distributed to schools (Baltacıoğlu, 1998).

The importance of Ismayıl Hakkı's determination of the methods to be applied in the painting courses in the teacher's training school can be expressed as the possibility of training teachers who would adopt his understanding of painting and that these teachers would teach the methods he believed in the schools they would attend. Furthermore, the distribution of the work he wrote to other schools paved the way for teachers to benefit from his work in the teaching of painting. Thus, it would not be wrong to say that the ideas of Ismayıl Hakkı had an effect on schools in terms of the teaching of painting in the Ottoman Empire. From this point of view, Ismayıl Hakkı's articles were important especially because they were distributed in schools by the ministry, and it was believed in the present study that it was necessary to reveal his approach to teach painting through his studies entitled "The Way of Teaching Painting" and "Teaching Methods of Painting".

Scope of the Study

The present study addresses the articles written by Ismayıl Hakkı in 1913 and his views on the teaching of painting for young age groups in a part of his work, that he derived from his articles and was published by the ministry of education in 1915. In his studies, Ismayıl Hakkı focused on issues such as the age of painting education, the purpose of painting education, the teaching of painting in schools, in what style painting should be taught and how painting should be done. Based on this context, in the present study, the views of Ismayıl Hakkı on the teaching of painting were discussed and also evaluated according to today's understanding.

METHOD

The historical research method was used in the study. Historical research is the systematic collection and evaluation of data in order to describe, explain, and thus understand the actions and events that took place in the past. Historical studies enable people to become aware of what happened

[2] Since there was no surname law in Turkey at the time when Ismayıl Hakkı conducted these studies, the surname "Baltacıoğlu" is not used in the text. The surname law was enacted in 1934, and after this date, Ismayıl Hakkı took the surname Baltacıoğlu.

in the past, learn how things were done in the past, and aim to show that the events taking place today are actually a process of the actions and situations that emerged. Furthermore, the report, which is produced as a result of historical studies, constitutes a literature on the subjects that researchers will study. The aim of educational history studies is to describe some aspects of the past in relation to education and/or school (Fraenkel et al., 2011: 535-536).

Data Collection Tools

Since the study was conducted using the historical research method, documents were used as a data collection tool. The documents used in the study were composed of Ismayıl Hakkı's article entitled "The Way of Teaching Painting" and work entitled "Teaching Methods of Painting" on the teaching of painting, and various copyright works.

Data analysis

In this study, descriptive approach was preferred as the data analysis method. The descriptive approach can be realized by staying as faithful as possible to the original structure of the data collected in the studies (Wolcott, 1994). In this context, the researcher stayed faithful to the data obtained from the works written by Ismayıl Hakkı.

RESULTS

Only Ismayıl Hakkı's views on the teaching of painting for young age groups will be included in this section.

Ismayıl Hakkı's Views on the Teaching of Painting

Considering the Ottoman civil schools, the inclusion of the painting course in the lowest level corresponded to the late periods. Until 1913, when Ismayıl Hakkı wrote his work and articles, painting course started to be taught from rüşdiye schools (secondary schools). Ismayıl Hakkı believed that the painting course should be taught from primary school[3] and even claimed that children started to paint on their own from the age of three and had ties with painting. He expressed that the children of all ages painted according to themselves and held the views that painting courses should be given from an early age, just like the language education given to gain habits from an early age, that children's painting skills would improve as they painted, and that children's painting skills would fade if they were not familiarized with painting at an early age. So, according to him, what was the purpose of teaching painting in schools and what should it be? He argued that the aim of raising painters would not be pursued by giving painting courses in schools and that the main purpose of the painting course is to develop children's hand and intelligence skills and to raise thinking, sensitive and strong-willed individuals (Ismayıl Hakkı, 1329a; 1331).

Ismayıl Hakkı considered the paintings made by thinking as more important than the beautiful and bright paintings (ornamentalists, decorations) in his painting courses, and he found it significant that the child should see the object well and describe what he/she sees well instead of drawing beautiful lines and shadows. Furthermore, he criticized the understanding of painting teaching in Ottoman schools and stated that only students who could draw well were appreciated, however, the important thing was not to draw well in children, but that a good view should be provided. Here, he criticized the teaching of painting in the Ottoman Empire and stated that "the most admired student in us is not the one who sees and makes the best, but the one who paints the most beautiful and most ornamented pictures, whether he/she sees them well or not". It is very important to dwell on the

[3] Along with the Provisional Law on Primary Education (Tedrisat-ı İbtidaiye Kanun-ı Muvakkati) enacted in 1913, primary and secondary schools were merged under the primary education level. Thus, a 6-year primary education level was established (Tedrisat-ı İbtidaiye Kanun-ı Muvakkati, 1329). Ismayıl Hakkı's statement in his work indicating that painting should start from primary school actually express the necessity of starting it from the first grade.

difference between seeing and looking. The main thing is to examine and analyze nature and to paint by thinking about it, not the cute, fancy, decorated, or pretty-looking one (Ismayıl Hakkı, 1329a; 1331).

He categorized the painting in four ways as a result of his studies and what he read. He named these categories as painting made by looking directly at an existing thing, painting made by rote independently of an example, imaginary painting made through imagination, and creative painting with a plot involving imagination. Ismayıl Hakkı detailed his categories as a concrete painting if the subject consisted of animals, people and objects, as abstract painting or geometric painting if it included measure and geometry, as mechanical paintings if geometric paintings consisted of machine paintings, and as embellishment (ornamental) painting if the paintings included decorations. He emphasized that all the types of painting he expressed should be taught in schools and considered that each type would be beneficial for the development of the children. He indicated that painting from nature allowed the child to see the object well and to think about it, that painting made by rote allowed the repetition of memories and dreams about the object and embedded the memories firmly in the memory, that the type of imaginary painting developed the imagination and even that imaginary painting is a source of happiness and that many things would be missing from one's happiness if imaginary painting was not made as a child, that creative painting developed creativity in the child's perception, provided the child with the ability to reveal objects that are unique in nature, and had benefits such as preparing for art education. Moreover, he stated that geometric paintings allow to think and imagine on abstract shapes, that concrete painting improved the ability to evaluate external objects, that mechanical painting not only gave an idea of education but also prepared it for industry and commerce, and that embellishment painting improved both the creativity ability and the perception of beauty. Therefore, he believed that children and young people should learn all these painting styles (Ismayıl Hakkı, 1329a; 1331).

Considering the Ottoman schools, only one type of painting was taught, which was criticized by Ismayıl Hakkı. He stated that there was only painting from nature was taught, therefore, the benefits of other types of painting could not be utilized. He stated that showing only paintings from nature in the Ottoman Empire was not suitable for the developmental characteristics of children. He considered that it was appropriate for children to have imaginary painting made from the youngest ages and even to paint only imaginary until the age of eight and nine and he emphasized that they could not paint from nature until this age. He argued that a tendency towards painting from nature would emerge as children made imaginary paintings. He even recommended that children should be left free to paint by themselves until they were seven or eight years old, that it would be more appropriate to give them the opportunity to paint as they wished, and that a subject should be determined for those who were older and teaching painting on that subject. While he criticized the teaching of a single type of painting in the Ottoman Empire, he also expressed his views on what kind of role the teacher would take while making students in schools paint. He expressed his criticisms on the role of the teacher in the Ottoman education system, and expressed a very serious criticism that they were behind in painting teaching, as in all courses in schools (Ismayıl Hakkı, 1329a; 1331).

He indicated that teachers corrected and beautified the paintings made by the students in schools, this method was wrong, however, it was believed that this way of teaching was correct. In fact, it did anything other than beautifying the students' paintings that weren't beautiful. By stating that the corrections made by the teacher in order to beautify the picture did not have any contribution, he emphasized that the teacher should take a role so that the students could benefit and contribute to their development, and he did not find the corrections made by the teacher to beautify the painting suitable for the development of students. According to him, the teacher should not touch the student's painting and should take the role of a guide for the students to find out their mistakes. He also recommended that teachers should appreciate not the beautiful paintings of the students but the ones that were found to be beautiful should be appreciated even though the lines in the paintings were bad (Ismayıl Hakkı, 1915).

Ismayıl Hakkı suggested the idea that a teaching from easy to difficult should be preferred in painting, and he explained what was easy and what was difficult according to his own opinion. According to him, it was easier for the child to draw the concrete than the abstract. Therefore, he found it appropriate to teach the concrete ones as a priority and to show the abstract paintings in the future during the teaching of painting. He also expressed differences according to each class in the concepts of concrete and abstract paintings. Based on the child's perception, he evaluated the fact that something was both easy and difficult, in which every object had easy and difficult lines, even if painting would be started with the concrete one. He indicated that the human figure drawn by a child was not only at the same level as those drawn by students studying fine arts in higher education, however, it was not necessary to choose the objects according to the grade level, but by drawing the same objects in each class, it should be ensured that the children make increasingly difficult lines according to their development. Indeed, the concept he used here is maturation. He stated that the child's perception in painting step-by-step could develop and mature according to age development. He taught that the children's drawing ability and ability to perceive objects would develop according to their age and development, and therefore, drawing on the same objects every year would contribute to the developmental stages of children. He emphasized that it would be sufficient to draw objects containing the main shapes in the paintings, and that while painting a bird or a fish, there was no need to paint all fish or birds, and that a single main shape should be used. He also mentioned that if there were no living examples of the pictures to be made, or if there was no living example, stuffed animals should be brought to the classroom, and he approved that the toy should be brought to the classroom if it could not be found, and he stated that the toys attracted more attention of the children in the lower grades. He recommended that if the toy could not be found, the mud mold should be made by the teacher and that the student should paint on this mold. He also indicated that it was necessary to abandon the painting of objects that could not be reached. If the class was small, he considered that it sufficient to have one sample, and if the class size was large, he found it more appropriate to divide into groups and have a painting done on several samples. Thus, he thought that the difficulty of examining a single sample in large and crowded classrooms would be facilitated. Furthermore, he indicated that the teacher should have an encouraging role in making painting courses not only in classrooms, but also in nature and at home, and that even outside of the painting course hours, children should go out to the schoolyard and paint only in the way they desired. Thus, the painting would not only stay in the classroom, but also would play a constant role in the child's life (Ismayıl Hakkı, 1329a; 1329b; 1331).

He defended the method of discovery with questions, that the Ottoman educators used in many courses (Oruç & Kırpık, 2006; Kırpık & Oruç, 2006), which was called as the discovery method in the painting process. If a duck was to be drawn, he did not find it sufficient to bring a sample of the duck to the classroom, and it was introduced making the student discover the features that the student could not pay attention to with questions as a correct technique. He indicated that the students would be able to look at the duck more carefully and discover the duck before making their painting before starting the painting, by asking questions such as the differences between the length and width of the duck, how its duck bill was, what was the head of its duck bill, how the duck's neck was and how many times its duck bill was, how its feet, body and back were. However, he emphasized that it should be kept in mind that there may be changes based on the abilities of the children according to the age and class category, and that the questions could be changed according to different situations (Ismayıl Hakkı, 1329a; 1331).

He criticized that the teachers made students start painting with charcoal and they did not prefer the use of paint, and he argued that the use of paint was appropriate from the child's early age and that there was no need for a hierarchy like using charcoal first and then paint. He found it more appropriate for children to use colors and paints and learn paints by using them since they love them, and he believed that it would also make the children happy. Although the most suitable paints for children were pencil paints, he recommended that they should use paint materials such as watercolors and pastels as they get older (Ismayıl Hakkı, 1331).

One of the issues mentioned by Ismayıl Hakkı was the issue of painting by looking at the pictures. He indicated that painting from pictures was not appropriate in terms of the teaching method of the period, however, painting only from nature was against the spirit of the work, and that it was necessary to benefit from the paintings of famous painters in accordance with the nature of the work, and that it was not possible to observe the lines and shadows of the paintings made by the painters in nature, and therefore, imitating the paintings of the painters could contribute to the teaching of painting. In particular, he described painting from pictures as a course to complete the knowledge of painting rather than a teaching method (Ismayıl Hakkı, 1329b; 1331).

He further deepened the subject by asking the question whether children should be made paint with their imagination or based on their observations in nature, or whether they should be made paint by copying a painting. Since Ismayıl Hakkı was a pedagog, he was an intellectual pedagogy with knowledge on the tendencies of children according to their ages. In addition to examining the trends of the period with regard to painting, he knew how to evaluate the situation not only in teaching painting through painting, but also in terms of the psychological and physical development of children. Indeed, it can be said that he determined that making children to make painting from pictures was not wrong practice by his determinations in this direction. He indicated that the children had a serious tendency to draw on pictures by copying them with thin paper, and they preferred this style of painting more, and even the most talented people preferred it. In fact, he mentioned that the child's doing this is not a messy, vagrant method, but a tendency to add something to the child, and that the knowledge of painting was gained not only by drawing concrete objects but also by copying them. Therefore, he thought that it would be appropriate for the teacher to apply to this method from time to time. He supported his own views by stating that it was compatible with Herbert Spenser's statements about the painting and that Spenser was also recommended to copy from the painting. However, the purpose of teaching painting in schools was not only for children who could draw on samples, but also for children and young people to gain shape memory about the main shapes that can improve their memory. Therefore, he also argued that students gained the skills to paint what they wanted to draw by rote, without a sample. He says both painting should be done and it should be memorized. To this end, he suggested that the repetition method should be used and that repetition was the most important method for memorization, however, he emphasized the memorization of the painting by expressing that the painting should be made from the sample first and that those that were not made from the sample should not be made by rote. He also used a criticism to strengthen his views on this subject, and stated that some painters had very high skills in painting on a sample, but when he was asked for a description or a drawing, he found it difficult to visualize and draw it in his own mind. It may not seem correct that Ismayıl Hakkı described those who painted by looking as good painters, but it should be taken into account that he observed the painters of the period and offered ideas in this direction (Ismayıl Hakkı, 1329b; 1331).

The first pictures of a child were from the side profile and in two dimensions. He could not paint three-dimensional, voluminous forms. He had difficulty in painting especially from the front profile. He drew the feet of a figure drawn from the side, or the chair that needed to be drawn in three dimensions, in two dimensions. In fact, he stated that the child did not have a developed perspective, and he did not find it right for children to start perspective education at a young age, and that even if perspective education was given to young children, children could not comprehend the subject. Since it included a lot of technical information, he found it more appropriate to explain certain perspective subjects only after the age of 9-10. He stated that not giving perspective education after these ages would lead to problems in children's painting of voluminous images of objects correctly and would cause deficiencies. He recommended that the first perspective courses should be based on objects and observation, and argued that it would be appropriate to show how perspective was by observation and examination before three-dimensional objects were drawn. He argued that if it was not done, basic perspective knowledge could not be understood. For instance, a flower pot should be shown and explained from every angle. It should be shown that there can be thousands of different positions and thousands of different vase drawings, depending on the viewer's point of view (vanishing point and horizon line). Furthermore, the shapes that the vase would take in each position should be described. It

can be shown not only on the vase, but also on almost everything in nature, animals, plants and everyday use items (such as a mug, lamp, chair) (Ismayıl Hakkı, 1329a; 1329b; 1331).

After the definition of perspective and explanations, the teacher should definitely show them by drawing. Learning cannot be completed if these drawings, which are completely based on technical knowledge and measurements, are not explained by drawing. The drawing of a three-dimensional form and how to draw it in scale must be shown. Because the human brain cannot do this kind of drawing without receiving education. (Ismayıl Hakkı, 1329b; 1331).

The draft (sketch, preliminary work) should only describe what is intended to be drawn, with as few elements as possible. Detailed draft drawings should be avoided. Because the student may tend to imitation instead of getting ideas from them. Instead of a detailed over-described drawing, sketchy drawings outlining the outlines that will give the student an idea of what is what should be made (Ismayıl Hakkı, 1329b; 1331).

DISCUSSION AND CONCLUSION

Ismayıl Hakkı (Baltacıoğlu) was an important figure in the history of pedagogy in Turkey in terms of his views on education. He worked as a teacher during the Ottoman period and gave various conferences to popularize his ideas. One of the works written by Ismayıl Hakkı was his work on the teaching of painting. It was distributed by the Ministry of Education as a supplementary book to schools in order to contribute to the implementation processes of painting teaching and teachers. Therefore, the articles he wrote and his work that he produced by expanding his articles showed that his ideas found application phase in schools. Furthermore, the possibility that the teachers he trained would be influenced by his own ideas can be considered as evidence that his views were conveyed to more people. While there is no independent study on Ismayıl Hakkı's views on the teaching of painting, when his views are compared with today's education, the validity of his discourses, even after a century, is a subject worth discussing.

Ismayıl Hakkı believed that painting education should be started from an early age and found it correct to include painting lessons in the formal education system as of primary school. He believed that children would gain a habit as they made painting, and if painting was not taught at an early age, giving it to children in their later years would leave them behind in art education. Furthermore, he also indicated that by giving painting lessons, children's hand and intelligence skills would be developed and argued that it would contribute to the training of sensitive individuals who thought. Ismayıl Hakkı made extensive explanations on how and at what age the art education to be given to children would be applied (Ismayıl Hakkı, 1331). Nowadays, there are similar approaches in the arts education given to younger age groups. Each individual has different developmental characteristics at different stages of life. Accordingly, education and training programs should be organized by taking into account the readiness and maturation levels of individuals depending on their developmental characteristics. Especially while giving art education, the feedback expected from children varies according to their developmental stages, and the art educator should be aware of these differences. For instance, according to Piaget's Theory of Cognitive Development, as long as a child does not reach sufficient maturity, no matter how much education he receives, he will not be able to return the education. “Children may have difficulties in artistic learning (especially in the field of technical knowledge and skills) when they are forced to learn the subjects presented in an environment that is not suitable for their developmental characteristics in art activities” (Artut, 2017, p. 39). In this context, it is very important for an educator to have information about the linear developmental characteristics of children. It should also be noted that each student may have different developmental characteristics.

Ismayıl Hakkı found it seeing, noticing and analyzing valuable rather than the child's ability to draw well. He expressed the role of the teacher on the student as a guide and did not find the official correction of the teacher correct. He considered that it was correct for a teacher not to correct the student's drawing and that the student's paintings should be appreciated even if they were bad. Whether the teacher should interfere with the painting student's work is still a controversial issue.

Interfering with the student's painting may result in a constant need for a teacher. However, showing the mistakes made by the student while painting without any intervention by the master/educator/teacher with minor interventions may cause the learning to be incomplete, which does not only mean that the painting is depicted correctly, but also that it learns to see correctly. Just as it noticed, corrected and developed mistakes since childhood in all areas of life. Furthermore, he focused on the practice of the teacher, whom he considered as a guide, to have the student discover the picture to be drawn. The understanding of learning through discovery, which was expressed as the discovery method in the Ottoman period and adopted in many courses, is a method that is also valid in today's education. Ismayıl Hakkı appears as proof that a method used today was also used a hundred years ago. It would not be a wrong statement to say that education is a process work, there are methods from the past to the present, and these are perhaps tried and better constructed and still exist today.

By dividing the painting into various types, his students mentioned the necessity of learning the more difficult lines step by step every year and making the lines suitable for the age group. He considered that the type of painting, that he described as imaginary painting, must be done from an early age, and even that it was appropriate for children to paint only imaginary until the age of eight or nine, and he claimed that they could not paint from nature until these ages. However, according to his criticism, only nature paintings were made in Ottoman schools. He kind of rebelled against the understanding of painting teaching of his time. He went further and recommended that children should be left free to paint until the age of seven and eight, that it would be more appropriate to give them the opportunity to draw as they wished, and that a subject should be determined for the older age groups and taught on that subject.

Among the age groups addressed by Ismayıl Hakkı, the age range of 7-9 is called as (schematic period) today. In this period, the schemas in the child's mind develop in direct proportion to the socio-cultural environment in which he lives and the education he receives. The transfer of this development to a two-dimensional surface proceeds in a healthy way, not only by increasing the creative environment of the family and the teacher, but also by providing the students with critical thinking, making activities to improve their visual intelligence and examining nature and the environment (Kırışoğlu, 2014).

He adopted a teaching style from easy to difficult for painting and recommended to first start painting with concrete since he described concrete painting as easier. He indicated that the child's perception in painting step-by-step could develop and mature according to age development. He taught that the child's drawing ability and ability to perceive the object would develop according to his age and development and therefore, painting every year over the same objects would contribute to the developmental stages of the child (Ismayıl Hakkı, 1331). “According to Smith, writing and drawing are parallel behaviors. Just as writing has an alphabet and teaching writing from simple to difficult, the same simple to complex path is followed in teaching art. The student first learns the straight line, then the curved line, and then the combined forms of then, thus, gains the ability to draw structures with the correct ratio” (Kırışoğlu, 1991, p. 19).

He criticized that the teachers made students start painting with charcoal and they did not prefer the use of paint, and he argued that the use of paint was appropriate from the child's early age and that there was no need for a hierarchy like using charcoal first and then paint. He found it more appropriate for children to use colors and paints and learn paints by using them since they love them, and he believed that it would also make the children happy. Although the most suitable paints for children were pencil paints, he recommended that they should use paint materials such as watercolors and pastels as they get older. Although the ideas of Buyurgan & Buyurgan (2001) regarding that color is very important in conveying emotions support Ismayıl Hakkı's ideas about paints, they also claimed that, like Ismayıl Hakkı, children did not have artistic concerns and enjoyed working with colors and paints.

One of the issues mentioned by Ismayıl Hakkı was the issue of painting by looking at the pictures. He indicated that painting from pictures was not appropriate in terms of the teaching method

of the period, however, painting only from nature was against the spirit of the work, and that it was necessary to benefit from the paintings of famous painters in accordance with the nature of the work, and that it was not possible to observe the lines and shadows of the paintings made by the painters in nature, and therefore, imitating the paintings of the painters could contribute to the teaching of painting. In particular, he described painting from pictures as a course to complete the knowledge of painting rather than a teaching method (Ismayıl Hakkı, 1329b; 1331). Nowadays, the most criticized way of painting is painting from photography. Photographs can only be used on the condition that the painter paints in a way that breaks the effect of the photograph, that is, saves perspectives and viewpoints from the lens effect, as in nature. One of the main reasons for educators who reject copying is that it will affect the child's creativity. They argue that it will lead to an imitative way of thinking. Moreover, every child is inevitably influenced by great works of art. Gombrich asks, "Is there ever a pure eye, virgin hand in the world that has not been influenced by the paintings and works of art before it?", therefore, there is also the opinion that it is possible to benefit from the works of the masters in terms of learning, not imitation (Kırışoğlu, 1991, p. 198-199). This second view is compatible with Ismayıl Hakkı's view that sample pictures can be used.

The views put forward by Ismayıl Hakkı in the paintings based on embellishment are parallel with today's understanding. While he considered embellishment difficult for children to perceive, he found embellishment useful in teaching simple geometrical figures in the pictures. Indeed, the paintings based on embellishment are present especially in our traditionist/traditional arts. All of them are the forms either with an abstract or abstract understanding, and many of them are forms and versions transformed from nature. At this point, it is almost impossible to teach this kind of traditional understanding to children at primary level. This kind of education can only be started for children who are oriented to this field and whose perception is strengthened after the naturalism period. In our country, this education is provided in departments related to fine arts and traditional arts in universities. Instead, more geometrical structures that can turn into more fun can be done for younger children.

It can be said that Ismayıl Hakkı's recommendations to have students draw pictures not only in the classroom but also outdoors is another view that is compatible with today's understanding (Ismayıl Hakkı, 1329a; 1329b; 1331). Indeed, almost everything in nature, indoors or outdoors, is the material of the painting student. It is not possible to complete painting learning when stuck in certain times and places. Painting should become a way of life for the student and he should be able to draw at any time. He should be able to envision in the mind, if not actually, in thought. Without this, the artistry skill cannot be improved. According to Buyurgan & Buyurgan, (2001), the child should benefit from museums, works of art and its surroundings not only in the school environment but also outside the school.

Ismayıl Hakkı emphasized that there may be great differences for the perspective education (two-dimensional-three-dimensional voluminous forms) according to the ages of the children. He emphasized that drawings that require technical knowledge should only be explained after the age of 9-10. Then, he explained in detail that objects could be drawn with their voluminous images and what needed to be done to be able to draw them. He recommended that the first perspective courses should be based on objects and observation, for instance, a flower pot should be shown and explained from every angle. The points of vision should be shown in different ways. It should be applied to all animate and inanimate objects. After these experiences, the student should be taught with sketches (sketch-preliminary work) by drawing animate and inanimate objects.

When Ismayıl Hakkı's views on perspective are associated with today's understanding, it can be said that children have the capacity to give an idea about the size of the objects in their drawings from the age of four. However, these calculations are far from accuracy up to a certain age. The arm, head and torso proportions of a human figure vary according to the age of the child. In the drawings of young children, the arms can be long, the head small, and vice versa. Accurate drawings are tried to be achieved in the period of visual realism after the age of eight (Yavuzer, 1997). "The perspective understanding, which children have developed gradually since early ages, can reach a conscious

maturity only under the control of the art educator, especially in painting studies carried out at the level of secondary schools". It can be taught in detail for older age groups how to draw different images of objects in volume from different perspectives and how nature itself and the depth within it can be accurately drawn on a two-dimensional plane (Türkdoğan, 1984, p. 93).

This study addresses the views of Ismayıl Hakkı (Baltacıoğlu) on painting education. The study revealed the similarities between today's painting education and today's ideas about painting education more than a century ago. The views of Ismayıl Hakkı, who touched on many issues related to education in his own period, about painting education were evaluated. The study has contributed to the literature about the studies that reveal the ideas of Ismayıl Hakkı, who had an important place in the history of education in Turkey, in terms of the teaching of painting, and the limits of his importance in terms of painting education in the Ottoman period were determined. Furthermore, the study is an indication that education may have similar ideas from the past to the present.

RECOMMENDATIONS AND LIMITATIONS

Within the framework of the results obtained from the study, various recommendations are given below.

In the study, Ismayıl Hakkı's understanding of painting teaching in the Ottoman Empire and how he might have affected the Ottoman Empire were emphasized. It can also be investigated whether Ismayıl Hakkı carried out similar activities in the Republican Period and what kind of contribution he made to the painting education in the Republican Period.

The program related to teaching painting in the primary school curriculum was included in his memoirs, therefore, although we see that a state had an effect on educational activities throughout the country, the studies to determine whether this primary school curriculum was in the Ottoman or Republican will contribute to revealing the exact extent of the effect of Ismayıl Hakkı on the teaching of painting in the history of Turkey.

In the study, the views of Ismayıl Hakkı on painting teaching in the Ottoman Empire were discussed. Although Ismayıl Hakkı had views on many subjects in terms of education, new studies on his views that have not been addressed before, just like the teaching of painting, can be conducted by different researchers.

The present study addressed the works of Ismayıl Hakkı on the teaching of painting in young age groups. One of the limitations due to the nature of historical studies was the difficulty of identifying detailed documents and findings about events in the past. Two articles and one work of Ismayıl Hakkı on the teaching of painting could be found. However, it is known that he gave various conferences. However, while it was possible to reach the documents related to the different subjects of these conferences, no documents related to the teaching of painting could be found. Furthermore, he also mentioned in his memoirs that he wrote the program related to the teaching of painting in the primary school curriculum. However, it could not be determined which primary education curriculum this curriculum was. There was no opportunity to conduct an oral history study since Ismayıl Hakkı is not alive, and in his series called Hayatım (My Life), in which he wrote his memoirs, he did not give much detail about what he did about the teaching of painting. Therefore, the study was conducted on only two of his articles and one of his works.

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