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Investigation of the Effect of Traditional Children's Games on Problem-Solving Skills

Geleneksel Çocuk Oyunlarinin Problem Çözme Becerileri Üzerine Etkisinin İncelenmesi

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Abstract

The aim of this study is to examine the effect of traditional children's games on students' problem-solving skills. The study was conducted with a total of 32 voluntary students (14 boys and 18 girls) enrolled at Zafer Primary School in Gediz district of Kütahya province during the 2024–2025 academic year. A quasi-experimental design was employed, with 16 students assigned to the experimental group and 16 to the control group. Data were collected using the Problem Solving Inventory for Primary School Children developed by Serin, Bulut Serin, and Saygılı (2010). To test the normality assumption, Kolmogorov–Smirnov and Shapiro–Wilk tests were applied, and the results indicated that the data were normally distributed. Therefore, a Paired Samples t-Test was used to analyze the difference between pre-test and post-test scores. The analysis results revealed significant improvements in the experimental group's scores for confidence in problem-solving, self-control, and overall problem-solving ability, while avoidance behavior scores significantly decreased ($p < .001$). These findings suggest that traditional game-based activities were highly effective in enhancing students' problem-solving skills. Moreover, it was observed that students became more confident, conscious, and systematic in managing the problem-solving process.

Keywords Traditional games, Problem-solving skills, Child development, Self-control, Self-confidence

Öz

Bu araştırmanın amacı, geleneksel çocuk oyunlarının öğrencilerin problem çözme becerileri üzerindeki etkisini incelemektir. Araştırma, 2024-2025 eğitim-öğretim yılında Kütahya ili Gediz ilçesinde bulunan Zafer İlkokulu'nda öğrenim gören toplam 32 gönüllü öğrenci (14 erkek, 18 kız) ile yürütülmüştür. Çalışmada yarı deneysel desen kullanılmış; 16 öğrenci deney, 16 öğrenci ise kontrol grubunu oluşturmuştur. Veri toplama aracı olarak Serin, Bulut Serin ve Saygılı (2010) tarafından geliştirilen İlköğretim Düzeyindeki Çocuklar için Problem Çözme Envanteri kullanılmıştır. Verilerin analizinde normallik varsayımını test etmek amacıyla Kolmogorov-Smirnov ve Shapiro-Wilk testleri uygulanmış; elde edilen sonuçlar verilerin normal dağılım gösterdiğini ortaya koymuştur. Bu nedenle, ön test ve son test puanları arasındaki farkı belirlemek için Bağımlı Gruplar t-Testi yapılmıştır. Analiz bulgularına göre, deney grubundaki öğrencilerin problem çözme becerisine güven, özdenetim ve genel problem çözme becerisi puanlarında son test lehine anlamlı artışlar; kaçınma davranışı puanlarında ise anlamlı azalmalar saptanmıştır ($p<0,001$). Bu sonuçlar, geleneksel oyun temelli etkinliklerin öğrencilerin problem çözme becerilerini geliştirmede etkili olduğunu göstermektedir. Ayrıca, öğrencilerin problem çözme sürecinde daha planlı, bilinçli ve kendine güvenen bir yaklaşım sergiledikleri belirlenmiştir.

Anahtar Kelimeler: Geleneksel oyunlar, Problem çözme becerileri, Çocuk gelişimi, Özdenetim, Özgüven

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Introduction

Play is recognized as one of the oldest and most universal human activities, demonstrating its existence in diverse forms across all cultures throughout history. Beyond its mere function as entertainment, play embodies a natural learning process that critically supports an individual's cognitive, social, emotional, and physical development. Through play, children acquire knowledge about their environment, gain novel experiences, internalize social norms, and refine essential life skills. Piaget (1962) conceptualized play as an indicator of children's level of cognitive development, whereas Vygotsky (1978) defined it as a fundamental mechanism for learning and symbolic thought facilitated by social interaction. These theoretical frameworks collectively establish play as a multifaceted process that integrates both individual cognitive maturation and social learning in child development.

Play environments are crucial for fostering children's creativity, attention processes, problem-solving skills, and executive functions. During engagement in play, children formulate strategies, develop plans, negotiate obstacles, and evaluate outcomes; this iterative process consequently enhances their cognitive flexibility (Bruner, 1972; Smilansky, 1990). Furthermore, play significantly contributes to the acquisition of social competencies such as sharing, cooperation, patience, and empathy (Frost, Wortham & Reifel, 2012; Coşkuntürk et al., 2023). Group-based play activities provide children with practical experience in collective decision-making and conflict resolution, thereby consolidating their social problem-solving skills. From this perspective, play offers a unique developmental domain where cognitive and emotional learning organically converge.

Traditional games, which inherently reflect the historical accumulation and cultural values of societies, function as vital cultural learning instruments that promote children's development. These games, typically played with minimal or simple materials, are transmitted intergenerationally and instill a sense of cultural identity in children (Bekman, 2011; Onur, 2009). Traditional games are effective in developing not only physical proficiencies but also competencies related to strategic thinking, planning, and problem-solving. The specific rules inherent in these games necessitate generating solutions within constrained resources; consequently, children employ both their analytical and creative thinking skills through the development of diverse strategies (Lillard et al., 2013). Thus, traditional games provide an ecologically valid learning environment where cognitive and social development are naturally integrated.

Problem-solving is a complex, multifaceted competence that requires individuals to develop planned and effective strategies to overcome an obstacle or attain a specific goal (Mayer, 1992). This process encompasses significant cognitive, as well as emotional and social components. Piaget (1962) viewed problem-solving as a consequence of cognitive maturation, while Vygotsky (1978) emphasized that this skill is fundamentally developed through social interaction and collaborative activity. Problem-solving abilities are closely correlated with executive functions, cognitive flexibility, logical reasoning, and creativity (Diamond, 2013). Therefore, play-based problem-solving experiences nurtured in early childhood yield long-term benefits in terms of both academic achievement and essential life skills.

Recent empirical investigations indicate that play-based learning methodologies are more effective than conventional instructional approaches in promoting children's cognitive development (Hirsh-Pasek et al., 2009; Wood & Attfield, 2005). In line with this evidence, the integration of traditional games into educational curricula holds paramount importance for both the preservation of cultural heritage and the robust support of children's cognitive and social skills. However, a review of the extant literature

indicates a limitation in studies that utilize quantitative data to examine the specific effect of traditional games on problem-solving skills (Özdemir & Ramazan, 2014). This scarcity underscores the urgent need for further research that comprehensively addresses the relationship between play-based learning and sophisticated cognitive processes.

This research, therefore, aims to specifically determine the effect of a traditional games intervention on children's problem-solving skills. By addressing the role of play in cognitive and social development within a distinct cultural context, this study endeavors to provide empirically grounded evidence for the strategic integration of play-based learning approaches into current educational policies and curricula.

Materials and Methods

Research Model

A quasi-experimental design employing a pre-test/post-test control group structure was utilized for this study. Participants were randomly assigned to either the experimental group (n=16) or the control group (n=16). Students in the experimental group engaged in a series of traditional children's games over an eight-week intervention period. Conversely, students in the control group were not exposed to any specific play activity intervention during this time. The level of change in the dependent variable was assessed by administering the inventory as a pre-test before the intervention and readministering it as a post-test following the completion of the intervention period to both groups.

Research Group

The study group comprised male and female 1st-grade students (aged 6-7) attending Zafer Primary School in the Gediz district of Kütahya. A total of 32 students voluntarily participated in the study. The sample consisted of 14 male and 18 female students, with equal distribution (n=16) across the experimental and control groups.

Data Collection Tools

The Problem-Solving Inventory for Children (PSIC), developed by Serin, Bulut Serin, and Saygılı (2010), was utilized as the data collection instrument. This instrument is designed to quantitatively assess primary school children's abilities to solve problems encountered in daily life and evaluate their attitudes toward the overall problem-solving process.

The inventory comprises 24 items and is scaled using a 5-point Likert-type rating (1 = never, 5 = always). The scale is structured around two sub-dimensions: "Positive attitude towards problem-solving" and "Avoidance tendency."

The Cronbach's Alpha internal consistency coefficient for the scale was reported as 0.80 following validity and reliability studies. Items 3, 4, 7, 9, 13, 14, 16, 18, 20, 22, and 24 are reverse-scored. This reverse scoring procedure is necessary because elevated scores on these specific items signify an inclination toward problem avoidance. Consequently, a higher total score after reverse scoring indicates a greater proficiency in the student's problem-solving skills and a stronger positive problem-solving orientation.

Formal permission for the use of the inventory in this research was secured via email communication with the developers. The linguistic suitability of the scale was verified by subject matter experts, and necessary adjustments were made to finalize it for the study application.

Intervention Process and Protocol

Prior to implementation, ethical compliance was ensured by obtaining the requisite permissions from the school principal's office, classroom teachers, and parents. Furthermore, ethical approval for the study was formally granted by the Kütahya Dumlupınar University Institute of Graduate Studies.

Upon securing all necessary authorizations, the intervention phase commenced. Students assigned to the experimental group engaged in various traditional children's games over an eight-week duration. The control group maintained their regular educational schedule without any supplemental play activities. The Problem-Solving Inventory for Children was administered as a pre-test to both groups before the intervention, and the same inventory was readministered as a post-test following the eight-week period.

The data collection was systematically conducted within the students' classroom environments. Before the test administration, participants received a concise and comprehensible briefing regarding the inventory's content. During the administration, each student completed their form independently, with the researcher providing clarification and guidance as needed. This protocol ensured the standardized and reliable execution of the measurements.

Data Analysis

The data obtained from the participants were examined for normality prior to statistical analysis. For variables that demonstrated a normal distribution, a paired-samples t-test was conducted. The level of statistical significance was set at $p < .001$ for all analyses.

Results

Table 1. Results of Normality Tests (Kolmogorov-Smirnov and Shapiro-Wilk).

Variable	Kolmogorov-Smirnov	df	Sig.	Shapiro-Wilk	df	Sig.
Pretest_ProblemSolvingConfidence	0,122	32	0,2	0,977	32	0,7
Pretest_Self-Regulation	0,145	32	0,09	0,957	32	0,23
Pretest_Avoidance	0,18	32	0,01	0,936	32	0,06
Pretest_TotalScore	0,093	32	0,2	0,981	32	0,84
Posttest_ProblemSolvingConfidence	0,087	32	0,2	0,976	32	0,67
Posttest_Self-Regulation	0,114	32	0,2	0,964	32	0,35
Posttest_Avoidance	0,12	32	0,2	0,977	32	0,7
Posttest_TotalScore	0,078	32	0,2	0,975	32	0,63

This study employed the Kolmogorov-Smirnov and Shapiro-Wilk tests to determine whether the variables in the dataset exhibited a normal distribution ($n = 32$). The results presented in Table 1 indicate that the significance values for the majority of the subscale scores were greater than 0.05. This finding suggests that the data successfully satisfy the assumption of normal distribution, thereby supporting the statistical appropriateness of applying a dependent samples t-test (Paired-Samples t-test) for subsequent comparative analyses.

Table 2. Pre-Test – Post-Test Comparisons: Means and Standard Deviations

Subscale	Pre-Test Mean	Post-Test Mean	N	Standard Deviation	Standard Error of the Mean
Confidencein Problem-Solving Ability	43,56	49,88	32	6,510	1,151
Self-Regulation	13,03	16,50	32	3,578	0,633
Avoidance	15,38	9,09	32	2,733	0,483
Total Score	72,00	75,44	32	6,175	1,092

The pre-test and post-test means and standard deviations are summarized in Table 2. Based on these results, the mean scores of the participants on the Confidence in Problem-Solving Ability subscale increased from 43.56 to 49.88. This growth indicates an improvement in students' self-confidence during the problem-solving process. In the Self-Control subscale, the mean scores rose from 13.03 to 16.50, suggesting an increased tendency for students to manage the problem-solving process more consciously and systematically (planned). Conversely, the mean scores on the Avoidance subscale decreased significantly, falling from 15.38 to 9.09; this demonstrates a reduction in students' tendency to avoid engagement with the problem-solving process. Regarding the Overall Total Score, the pre-test mean was 72.00, and the post-test mean reached 75.44, indicating a general improvement in the students' problem-solving skills.

Table 3. Dependent Samples t-Test Results

Subscale	Mean Difference	Standard Deviation	Standard Error of the Mean	95% CI Lower	95% CI Upper	t	df	p
Confidence in Problem-Solving Ability	−6,313	2,620	0,463	−7,257	−5,368	−13,627	31	<0,001
Self-Regulation	−3,469	1,685	0,298	−4,076	−2,861	−11,648	31	<0,001
Avoidance	6,281	3,937	0,696	4,862	7,701	9,025	31	<0,001
Total Score	−3,438	4,711	0,833	−5,136	−1,739	−4,128	31	

**p<0.01

The results of the Dependent Samples t-Test are presented in Table 3. The analyses indicate that following the intervention, significant increases were observed in the students' overall perception of problem-solving skill ($t(31) = -4.128$; $p < 0.001$), as well as in the Confidence in Problem-Solving Ability subscale ($t(31) = -13.627$; $p < 0.001$) and the Self-Control subscale ($t(31) = -11.648$; $p < 0.001$). Conversely, a statistically significant reduction in scores was detected for the Avoidance subscale ($t(31) = 9.025$; $p < 0.001$).

These findings unequivocally demonstrate that the applied educational program positively influenced the students' problem-solving skill perception. These outcomes confirm that the program successfully achieved its behavioral objectives and possesses high statistical power.

Discussion and Conclusion

The primary finding of this research is that the eight-week traditional children's games intervention led to significant and positive developments in the problem-solving skills of 1st-grade primary school students. These results are highly consistent with preceding

studies that affirm the contribution of play-based learning to children's cognitive and social development (Piaget, 1962; Vygotsky, 1978; Hirsh-Pasek et al., 2009).

Specifically, the significant increase in the Confidence in Problem-Solving Ability subscale demonstrates that the students' belief in their own problem-solving capacity was strengthened. This outcome suggests that traditional games provide a structured experience that supports children's cognitive structures and self-efficacy. Piaget's theory of cognitive development posits that children experience mental maturation processes as they overcome age-appropriate challenges encountered in play (Piaget, 1962). Similarly, Vygotsky (1978) emphasized that social interactions and language use, which flourish through play, augment a child's capacity for symbolic thought and problem-solving. In this context, it can be argued that traditional games offer crucial contributions to children's cognitive development through the lens of self-confidence.

The improvement observed in the Self-Control subscale indicates that students began to manage the problem-solving process in a more conscious, systematic, and planned manner. This result supports the view held by Bruner (1972) and Smilansky (1990) that executive functions are developed through play. In traditional games, acting within the framework of limited materials and specific rules allows children to enhance their attention, memory, planning, and strategic thinking skills. Thus, play creates an environment that not only facilitates enjoyment but also supports active participation in the problem-solving process by increasing children's cognitive flexibility.

Another significant finding of the research is the statistically significant reduction in the Avoidance tendency. This suggests that children began to confront the problems they encountered more actively and behaved more courageously in resolving issues. In line with Parten's (1932) stages of social play theory, children's development of skills like cooperation and sharing in social games enhanced their ability to resolve intra-group conflicts and develop common strategies (Erbay & Durmuşoğlu, 2019). Consequently, it is understood that social interactions positively influenced problem-solving motivation and contributed to the reduction of avoidance behaviors.

The research also showed a significant overall increase in total problem-solving scores. This points to the fact that traditional games facilitate the holistic support of cognitive, emotional, and social development. The literature consistently emphasizes that play-based learning increases children's active participation and creativity, thereby improving their problem-solving skills (Hirsh-Pasek et al., 2009; Wood & Attfield, 2005). These findings highlight the necessity of integrating structured play activities into educational programs.

Furthermore, as demonstrated by neuropsychological research, the prefrontal cortex regions of the brain responsible for executive functions become active during play, which supports the development of skills such as planning, attention, and flexible thinking (Diamond, 2013; Panksepp, 2007). The requirement of traditional games to solve problems with limited resources facilitates the strengthening of synaptic connections and increases the flexibility of neural networks. Therefore, it can be inferred that these games contribute to children's cognitive and motor development, ensuring the lasting enhancement of their problem-solving skills.

This research investigated the effect of traditional children's games on the problem-solving skills of primary school students, providing concrete data on the contributions of play-based interventions to cognitive and behavioral development. The results of the eight-week traditional games intervention demonstrated a significant increase in the experimental group students' level of confidence in problem-solving ability and a statistically significant improvement in self-control skills. Conversely, a marked decrease was observed in their tendency to avoid the problem-solving process.

These findings suggest that play-based learning effectively supports children's cognitive flexibility, strategic thinking capabilities, and emotional regulation skills. The research findings are consistent with Piaget's (1962) theory of cognitive development and Vygotsky's (1978) social learning approach, confirming that learning through play contributes to a child's cognitive maturation and social interactions. Furthermore, the results parallel the views of Bruner (1972) and Smilansky (1990) regarding the development of executive functions through play. The necessity of solving problems within the constraints of limited materials and rules in traditional games stimulates the development of children's analytical and creative thinking skills.

It is concluded that play-based interventions are effective in promoting a positive attitude toward problem-solving and possess the characteristic of supporting cognitive development. Concurrently, students' abilities to cope with challenges and develop alternative strategies during the problem-solving process were observed to be strengthened through games. The results emphasize that traditional games are not merely for entertainment but are pedagogically valuable tools that contribute to multifaceted developmental processes.

Recommendations

Curriculum and Educational Program Enrichment:

It is recommended that traditional games be systematically integrated into educational programs, particularly in early primary grades. Utilizing these play activities to develop problem-solving skills will significantly support students' cognitive and social development.

Teacher Professional Development:

Comprehensive in-service training programs focusing on play-based learning strategies should be organized for teachers. This will enable teachers to better understand the pedagogical value of games in learning processes and effectively plan and implement these activities.

Enhancing Family Participation:

Informative initiatives should be developed for parents to encourage the support of traditional games within the family environment. Families supporting their children's problem-solving skills through play will ensure the reinforcement and sustainability of these skills.

Need for Comprehensive and Longitudinal Research:

This study was conducted with a limited sample size and duration. Future research should examine the long-term effects using larger participant groups across different age groups, cultural contexts, and geographical regions. This would allow for a more

comprehensive assessment of the lasting impacts and contributions of traditional games to developmental processes.

Comparison of Different Game Types:

The effects of various types of traditional games on problem-solving skills should be investigated comparatively. Identifying which specific games contribute more significantly to cognitive and social development will enable the effective selection of games for educational programs.

Development of Technology-Supported Games:

Studies on the adaptation of traditional games to digital environments should be conducted. Digital games that preserve the pedagogical value of traditional games while supporting problem-solving skills can create innovative learning environments aligned with contemporary technological requirements.

Policy and Educational Management Recommendations:

Educational policies should be updated to emphasize the importance of play-based learning, and the necessary infrastructure support must be provided in schools to disseminate these approaches. School administrators should develop strategies to strengthen teacher-parent-school collaboration.

Kısaltmalar / Abbreviations

PSIC – Problem-Solving Inventory for Children

Beyanlar / Declarations

Etik Onay ve Katılım Onayı / Ethics approval and consent to participate

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During the preparation and writing of this study, scientific, ethical and citation rules were followed in accordance with the 'Higher Education Institutions Scientific Research and Publication Ethics Guidelines'; no alterations were made to the collected data, and this study has not been submitted for evaluation to any other academic publication medium. The author is solely responsible for any violations that may arise in connection with this article. The Ethical approval for the study was granted by the Ethical approval for the study was granted by the Scientific Research and Publication Ethics Committee of Kütahya Dumlupınar University, Faculty of Social and Human Sciences (document no. 24/11/2024-2024/10). All participants voluntarily participated in this study.

Veri Ve Materyal Erişilebilirliği / Availability of data and material

Bu çalışmanın bulgularını destekleyen veri seti, makul bir talep üzerine sorumlu yazardan temin edilebilir. Veri seti yalnızca akademik amaçlarla kullanılabilecek olup, verilerin kullanımında ilgili çalışmaya uygun şekilde atıf yapılması ve katılımcıların gizliliğinin korunması zorunludur.

The data that support the findings of this study are available from the corresponding author upon reasonable request. The dataset will be accessible only for academic purposes, and any use of the data will appropriately acknowledge the original study while maintaining the confidentiality of the participants.

Çıkar Çatışması / Competing interests

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Yazar Katkıları / Authors' Contribution Statement

Çalışmanın tasarımı ve planlanması: H.A., M.G.; Veri toplama, analiz veya yorumlama: M.G.; Makalenin hazırlanması: H.A., M.G.; Veri düzenleme, metodoloji geliştirme, ilk taslak yazımı ve gözden geçirme-düzenleme: H.A., M.G.; Tüm yazarlar makalenin önemli noktalarını eleştirel olarak gözden geçirmiş ve son versiyonunu onaylamıştır

Design and planning of the study: H.A., M.G.; Data collection, analysis or interpretation: M.G.; Manuscript preparation: H.A., M.G.; Data organization, methodology development, writing - original draft, writing – review and editing H.A., M.G.; All authors critically reviewed the key points of the manuscript and approved the final version.

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References / Kaynaklar

Bekman, S. (2011). Education and development in early childhood. İstanbul: Morpa Yayınları. S.24-32.

Bruner, J. S. (1972). Nature and uses of immaturity. *American Psychologist, 27*(8), 687–708. https://doi.org/10.1037/h0033144

Bruner, J. S., Jolly, A., & Sylva, K. (Eds.). (1976). *Play: Its role in development and evolution* (pp. 28–64). London: Penguin Books.

Coşkuntürk, O. S., Kurcan, K., Yel, K., & Güzel, S. (2023). Teknolojik gelişmelerin hareketsiz yaşama ve çocuklarda psiko-motor gelişime etkileri. *Dede Korkut Spor Bilimleri Dergisi*, *1*(1), 48-59. https://izlik.org/JA24BU27KE

Diamond A. (2013). Executive functions. *Annual review of psychology, 64*, 135–168. https://doi.org/10.1146/annurev-psych-113011-143750

Erbay, F., & Durmuşoğlu, M. C. (2019). The effects of traditional children's games on social development of preschool children. *Early Child Development and Care, 189*(10), 1693–1703. https://doi.org/10.1080/03004430.2017.1403430

Frost, J. L., Wortham, S. C., & Reifel, S. (2012). *Play and child development* (4th ed.). Upper Saddle River, NJ: Pearson Education.

Hirsh-Pasek, K., Golinkoff, R. M., Berk, L. E., & Singer, D. G. (2009). *A mandate for playful learning in preschool: Presenting the evidence*. Oxford Academic. https://doi.org/10.1093/acprof:oso/9780195382716.001.0001

Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. A., Smith, E. D., & Palmquist, C. M. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin, 139*(1), 1–34. https://doi.org/10.1037/a0029321

Mayer, R. E. (1992). *Thinking, problem solving, cognition* (2nd ed.). New York, NY: W. H. Freeman.

Onur, B. (2009). History of childhood in Turkey. Ankara: İmge Kitabevi. S.45-55

Özdemir, A., & Ramazan, O. (2014). The effect of traditional children's games on attention and reaction levels of elementary school students. *Anthropologist, 18*(1), 163–170. https://doi.org/10.1080/09720073.2014.11891531

Panksepp J. (2007). Can PLAY diminish ADHD and facilitate the construction of the social brain? *Journal of the Canadian Academy of Child and Adolescent Psychiatry = Journal de l'Academie canadienne de psychiatrie de l'enfant et de l'adolescent, 16*(2), 57–66. https://pmc.ncbi.nlm.nih.gov/articles/PMC2242642/

Parten, M. B. (1932). Social participation among pre-school children. *The Journal of Abnormal and Social Psychology, 27*(3), 243–269. https://doi.org/10.1037/h0074524

Piaget, J. (1962). *Play, dreams and imitation in childhood*. New York, NY: W. W. Norton & Company.

Serin, O., Serin, N. B., & Saygılı, G. (2010). Development of the Problem-Solving Inventory for Children (ÇPÇE) at the Primary Education Level. *İlköğretim Online, 9*(2), 446-458.

Smilansky, S. (1990). Sociodramatic play: Its relevance to behavior and achievement in school. In E. Klugman & S. Smilansky (Eds.), *Children's play and learning: Perspectives and policy implications* (pp. 18–42). New York, NY: Teachers College Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wood, E., & Attfield, J. (2005). *Play, learning and the early childhood curriculum* (2nd ed.). London: Paul Chapman Publishing.

Publishers' Note