



## Investigating the Effectiveness of Play-based Learning Strategies on Cognitive, Social, and Emotional Development in Preschools

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### ABSTRACT

The objective of the study to investigate the effectiveness of play-based learning strategies on cognitive, social, and emotional development in preschools. Effect and relationship between play-based learning strategies on cognitive, social, and emotional development in preschools. The research is quantitative and descriptive in nature. The population was comprised of all public and private ECE schools of tehsil city district Lahore. Data was gathered via a questionnaire. For data analysis, descriptive statistics (Mean and standard deviation) and inferential statistics (Pearson  $r$  and regression analysis). The findings of the study revealed that there was a highly significant effect and relationship between play-based learning strategies and cognitive, social, and emotional development. The effectiveness of play-based learning strategies, including Role Play and Dramatic Play, Sensory Play, Storytelling and Puppet Play, Loose Parts Play, and Outdoor Play and Nature Exploration, is well-supported by research highlighting their contributions to cognitive, social, and emotional development in preschool children.

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## 1. Introduction

Play-based learning has emerged as a pivotal approach in early childhood education, emphasizing the importance of play as a fundamental medium through which young children engage with the world around them. This approach is not merely about providing children with time to play; it encompasses a well-structured methodology that integrates play into the learning process to enhance various developmental domains. The significance of this educational paradigm is supported by extensive research highlighting its contributions to cognitive, social, and emotional growth (Fisher, 1992; Johnson, 2005). The current body of literature suggests that play is integral to children's development and can be harnessed to create rich learning environments that support holistic development. This introduction examines the effectiveness of several play-based learning strategies—Role Play and Dramatic Play, Sensory Play, Storytelling and Puppet Play, Loose Parts Play, and Outdoor Play and Nature Exploration—in fostering holistic development in preschool children.

Play-based learning is grounded in constructivist theories of learning, especially those of (Piaget, 1952). According to Piaget (1952), children learn in a manner where active engagement and exploration hold significance, with play functioning as an inherent means through which children can comprehend their experiences. He contended that play enables children to build an understanding of the world, presenting a process of experimentation and risk taking, without consequence, in a secure environment. Later, Vygotsky (1978), with the idea of the Zone of Proximal Development (ZPD), highlighted social interaction as a leading force in cognitive development. According to Vygotsky, children learn more effectively when they engage in collaborative play with peers and adults, which fosters both cognitive and social skills. Through

guided interactions, children can achieve higher levels of understanding and mastery of concepts than they could independently. Thus, play-based learning strategies are not merely enjoyable activities; they are essential for facilitating critical developmental processes.

Role Play and Dramatic Play are some of the most identified strategies inside play-based getting to know. These activities allow youngsters to interact in imaginative eventualities, allowing them to discover one-of-a-kind roles and perspectives. Research shows that such play notably enhances social abilities, as children have to negotiate roles, percentage thoughts, and collaborate with peers (Bergen, 2002). By way of accomplishing function play, children can test with social norms and expectancies that is vital for his or her expertise of complex social dynamics. Moreover, dramatic play has been related to improved language development, as kids articulate their thoughts and feelings at the same time as appearing out diverse situations (Whitebread et al., 2009). This linguistic engagement not only enriches vocabulary but also enhances narrative competencies, as children learn to structure memories and convey meaning thru communicate. By fostering empathy and understanding, position Play and Dramatic Play make contributions not simplest to social improvement but additionally to emotional growth, as youngsters learn how to navigate complex interpersonal dynamics and recognize the emotions of others.

Sensory Play includes activities that stimulate kids's senses via materials such as sand, water, and numerous textures. This form of play is critical for cognitive improvement, because it encourages exploration, experimentation, and problem-solving (Hirsh-Pasek et al., 2009). Engaging with sensory materials lets in kids to broaden nice motor abilities and hand-eye coordination while fostering interest and creativity (Zachor et al., 2017). The tactile stories provided by using sensory play make a contribution to cognitive strategies through enabling youngsters to make connections among their sensory stories and the standards they may be learning. Furthermore, sensory play has been proven to have calming consequences that can help children modify their emotions and control tension (Kirk, 2019). This regulation is crucial for emotional improvement, because it lets in kids to increase coping strategies and resilience in the face of demanding situations. As kids engage with sensory reviews, additionally they expand their capacity for emotional expression, gaining knowledge of to articulate emotions related to their sensory interactions. This interaction between sensory reviews and emotional development highlights the multifaceted benefits of sensory play in early youth education.

Storytelling and Puppet Play are effective equipment for reinforcing cognitive, social, and emotional development. Through storytelling, youngsters study narrative systems, extend their vocabulary, and improve comprehension abilities (Haven, 2007). The act of listening to testimonies now not best stimulates imagination however also affords possibilities for youngsters to reflect on their feelings and reports. Storytelling fosters important thinking as youngsters analyze characters' motivations and the effects of actions inside narratives. Puppet play in addition enriches this revel in by using allowing children to express their mind and feelings through characters, thereby facilitating emotional know-how and empathy (Ali et al., 2018). The use of puppets can function a bridge for youngsters to speak complicated emotions they will find difficult to specific directly, as a result improving their emotional vocabulary and know-how. This twin method to narrative play nurtures social competencies, as children regularly work together to create tales and manipulate puppets, fostering cooperation and collaboration. This collaborative storytelling enjoy promotes negotiation and conflict resolution abilities as youngsters paintings collectively to broaden plots and characters.

Loose elements Play refers to the usage of a spread of substances that can be moved, blended, and converted, allowing youngsters to engage in open-ended exploration. This form of play encourages creativity, important thinking, and problem-solving as youngsters manage materials to create their personal structures and situations (Gandini, 2014). Unfastened elements may be whatever from herbal materials like stones and leaves to guy-made items like packing containers and material. The open-ended nature of these materials lets in youngsters to interact in creative play that is important for cognitive flexibility. Unfastened parts play is likewise connected to cognitive flexibility, as kids discover ways to adapt their questioning when confronted with new challenges (Nicolopoulou et al., 2015). Moreover, it promotes social interactions, as youngsters often collaborate and communicate with peers all through play, sharing thoughts and negotiating solutions. Emotionally, free parts Play affords a safe space for

youngsters to experiment with exceptional roles and emotions, improving their emotional intelligence and resilience. The capability to create and adjust their environment empowers children, fostering a sense of business enterprise and self-efficacy.

Out of doors Play and Nature Exploration offer precise opportunities for kids to connect to their environment even as engaging in bodily interest. The benefits of out of doors play are nicely-documented, with studies indicating that it promotes physical health, gross motor improvement, and ordinary well-being (Fjørtoft, 2004). Outdoor play encourages kids to discover their environment, fostering interest and an appreciation for nature. Nature exploration additionally fosters cognitive development by way of encouraging curiosity and observation competencies, as kids investigate the herbal international (Kahn Jr & Kellert, 2002). Those reports offer kids with possibilities to invite questions and are looking for answers, similarly enhancing their cognitive talents. Socially, outdoor play often entails organization sports that sell teamwork, communicate, and hassle-fixing competencies (Burdette & Whitaker, 2005). Collaborative outdoor play can cause the improvement of management competencies and cooperation as kids learn how to work collectively closer to common dreams. Emotionally, being in nature has been related to decreased pressure and progressed mood, allowing kids to broaden a feel of connection to their surroundings and a more appreciation for the natural world (Capaldi, Dopko, & Zelenski, 2014). This connection to nature can decorate youngsters's emotional nicely-being and resilience, as they discover solace and joy in outdoor environments.

The effectiveness of play-based totally gaining knowledge of techniques, which includes position Play and Dramatic Play, Sensory Play, Storytelling and Puppet Play, loose components Play, and out of doors Play and Nature Exploration, is properly-supported by means of studies highlighting their contributions to cognitive, social, and emotional development in preschool children. These strategies no longer only have interaction children in meaningful studying stories but additionally foster vital skills vital for his or her holistic growth. As early youth educators keep to put in force those play-primarily based processes, it's far crucial to recognize the profound impact they have on shaping nicely-rounded people organized for future learning and social interaction. In the long run, embracing play as a critical thing of training will make sure that youngsters increase the important talents to thrive in an increasingly more complex global. via effective integration of play-based totally learning techniques, educators can create rich, supportive environments that foster curiosity, creativity, and collaboration, preparing children now not most effective for academic success however also for lifelong mastering and interpersonal relationships. The objective of this paper is to identify the level of play-based learning strategies, cognitive, social, and emotional development in preschools and to identify the relationship among play-based learning strategies, cognitive, social, and emotional development in preschools.

## **2. Methodology**

The research is quantitative and descriptive in nature. Data was gathered from the teachers using a survey method. Convenience sampling was used to choose 350 instructors from various public and private schools in the Lahore City Tehsil. Data was gathered through questionnaire. A 5-point Likert scale was adapted of Endler and Parker (1990) to measure the play based learning strategies. The validity of the questionnaire was found through experts' opinions and reliability through pilot testing. The Cronbach's alpha value of the questionnaire was 0.897. SPSS was used to analyze the data. For data analysis, descriptive statistics (Mean and standard deviation) and inferential statistics (Pearson r and regression analysis).

### **2.1. Data analysis**

Table 1 illustrates the sample description. According to the respondents responses, Role Play and Dramatic Play (M=3.78; SD=0.87), Sensory Play (M=4.07; SD=0.69), Storytelling and Puppet Play (M=4.15; SD=0.58), Loose Parts Play (M=4.14; SD=0.64), Outdoor Play and Nature Exploration (M=3.40; SD=1.27), Cognitive development (M=3.94; SD=0.60), Social development (M=4.16; SD=0.61), Emotional development (M=3.93; SD=1.23). Overall, respondents' responses reflected toward the level of agreement.

**Table 1: Sample description on the basis of mean and S.D.**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>
• Role Play and Dramatic Play	350	3.7843	.87314
• Sensory Play	350	4.0712	.69787
• Storytelling and Puppet Play	350	4.1589	.58975
• Loose Parts Play	350	4.1440	.64245
• Outdoor Play and Nature Exploration	350	3.4018	1.27666
Cognitive development	350	3.9440	.60284
Social development	350	4.1683	.61370
Emotional development	350	3.9361	1.2376

Table 2 illustrates the sample description. According to the respondents responses, Role play helps children build social skills (M=3.85; SD=1.10), Dramatic play supports emotional development (M=3.90; SD=1.07), Role play improves children’s communication skills (M=3.93; SD=1.07). Overall, respondents’ responses reflected toward the level of agreement.

**Table 2: Sample description (Role Play and Dramatic Play)**

<b>Items</b>	<b>N</b>	<b>M</b>	<b>S.D.</b>
Role play helps children build social skills.	350	3.85	1.102
Dramatic play supports emotional development.	350	3.90	1.072
Role play improves children’s communication skills	350	3.93	1.079

Table 3 illustrates the sample description. According to the respondents responses, Sensory play helps children improve their fine motor skills (M=3.88; SD=1.08), Sensory play promotes focus and calmness in children (M=3.82; SD=1.10), Sensory activities support children's exploration and curiosity (M=3.73; SD=1.17). Overall, respondents’ responses reflected toward the level of agreement.

**Table 3: Sample description (Sensory Play)**

<b>Items</b>	<b>N</b>	<b>M</b>	<b>S.D.</b>
Sensory play helps children improve their fine motor skills.	350	3.88	1.089
Sensory play promotes focus and calmness in children	350	3.82	1.105
Sensory activities support children's exploration and curiosity.	350	3.73	1.179

Table 4 illustrates the sample description. According to the respondents responses, Storytelling enhances children's listening and comprehension skills (M=3.85; SD=1.10), Storytelling and puppets boost children's creativity and imagination (M=3.76; SD=1.13), Puppet play encourages children to express emotions and ideas (M=3.72; SD=1.17). Overall, respondents’ responses reflected toward the level of agreement.

**Table 4: Sample description (Storytelling and Puppet Play)**

<b>Items</b>	<b>N</b>	<b>M</b>	<b>S.D.</b>
Storytelling enhances children's listening and comprehension skills.	350	3.85	1.105
Storytelling and puppets boost children's creativity and imagination.	350	3.76	1.130
Puppet play encourages children to express emotions and ideas.	350	3.72	1.171

Table 5 illustrates the sample description. According to the respondents responses, Loose parts play encourages creativity and problem-solving in children (M=3.67; SD=1.18), Using loose parts helps children develop fine motor skills (M=3.79; SD=1.12), Loose parts play promotes independent thinking and exploration (M=3.82; SD=1.23). Overall, respondents’ responses reflected toward the level of agreement.

**Table 5: Sample description (Loose Parts Play)**

<b>Items</b>	<b>N</b>	<b>M</b>	<b>S.D.</b>
Loose parts play encourages creativity and problem-solving in children.	350	3.67	1.189
Using loose parts helps children develop fine motor skills.	350	3.79	1.121
Loose parts play promotes independent thinking and exploration.	350	3.82	1.236

Table 6 illustrates the sample description. According to the respondents responses, Outdoor play improves children's physical health and coordination (M=3.52; SD=1.24), Outdoor activities help children develop social skills through group play (M=3.72; SD=1.19), Nature

exploration fosters curiosity and environmental awareness in children (M=4.07; SD=0.90). Overall, respondents' responses reflected toward the level of agreement.

**Table 6: Sample description (Outdoor Play and Nature Exploration)**

Items	N	M	S.D.
Outdoor play improves children's physical health and coordination.	350	3.52	1.249
Outdoor activities help children develop social skills through group play.	350	3.72	1.199
Nature exploration fosters curiosity and environmental awareness in children.	350	4.07	.908

Table 7 illustrates the sample description. According to the respondents responses, Children are encouraged to ask questions and think critically (M=4.12; SD=0.88), Learning experiences support memory and recall in children (M=4.12; SD=0.95), Activities are designed to improve problem-solving skills (M=3.97; SD=1.00), Children are given opportunities to make decisions independently (M=4.16; SD=0.73), Hands-on activities help develop logical thinking and reasoning skills (M=4.15; SD=0.71). Overall, respondents' responses reflected toward the level of agreement

**Table 7: Sample description (Cognitive development)**

Items	N	M	S.D.
Children are encouraged to ask questions and think critically.	350	4.12	.887
Learning experiences support memory and recall in children.	350	4.12	.955
Activities are designed to improve problem-solving skills.	350	3.97	1.001
Children are given opportunities to make decisions independently.	350	4.16	.730
Hands-on activities help develop logical thinking and reasoning skills.	350	4.15	.718

Table 8 illustrates the sample description. According to the respondents responses, Children are encouraged to share and take turns with others (M=4.16; SD=0.84), Group activities foster teamwork and cooperation (M=4.14; SD=0.77), Children are guided in resolving conflicts peacefully (M=4.19; SD=0.79), Children learn to express their feelings in a respectful way (M=4.10; SD=0.80), Activities help children build positive friendships (M=4.16; SD=0.84). Overall, respondents' responses reflected toward the level of agreement.

**Table 8: Sample description (Social development)**

Items	N	M	S.D.
Children are encouraged to share and take turns with others.	350	4.16	.847
Group activities foster teamwork and cooperation.	350	4.14	.778
Children are guided in resolving conflicts peacefully.	350	4.19	.795
Children learn to express their feelings in a respectful way.	350	4.10	.802
Activities help children build positive friendships.	350	4.16	.841

Table 9 illustrates the sample description. According to the respondents responses, Children are encouraged to recognize and name their emotions (M=4.18; SD=0.76), Positive interactions help children develop a sense of self-worth (M=4.13; SD=0.81), Children learn to show empathy toward others (M=3.56; SD=1.41), Children are supported in managing frustration and stress (M=3.23; SD=1.45), Activities help children build self-confidence (M=3.42; SD=1.40). Overall, respondents' responses reflected toward the level of agreement.

**Table 9: Sample description (Emotional development)**

Items	N	M	S.D.
Children are encouraged to recognize and name their emotions.	350	4.18	.765
Positive interactions help children develop a sense of self-worth.	350	4.13	.817
Children learn to show empathy toward others.	350	3.56	1.417
Children are supported in managing frustration and stress.	350	3.23	1.457
Activities help children build self-confidence.	350	3.42	1.409

Table 10 illustrates effect of play-based learning strategies on cognitive development. The B-value 0.735, t-value 18.76 and p-value 0.000. This shows that there was highly significant effect of play-based learning strategies on cognitive development in preschools.

**Table 10: Effect of play-based learning strategies on cognitive development**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Play-based learning strategies	-2.736	.331	.735	18.764	.000
	1.556	.083			

Table 11 illustrates effect of play-based learning strategies on social development. The B-value 0.593, t-value 12.699 and p-value 0.000. This shows that there was highly significant effect of play-based learning strategies on social development in preschools.

**Table 11: Effect of play-based learning strategies on social development**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Play-based learning strategies	1.794	.189			
	.602	.047	.593	12.699	.000

Table 12 illustrates effect of play-based learning strategies on emotional development. The B-value 0.633, t-value 14.101 and p-value 0.000. This shows that there was highly significant effect of play-based learning strategies on emotional development in preschools.

**Table 12: Effect of play-based learning strategies on emotional development**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Play-based learning strategies	2.485	.123	.633	14.101	.000
	.445	.032			

The study's primary variables and their correlations are displayed in Table 13. The results indicate that there is a low positive and statistically significant connection ( $r=.379$ ,  $p>.000$ ) between play-based learning strategies and cognitive development.

**Table 13: Relationship between play-based learning strategies and cognitive development**

		Play-based learning strategies Cognitive development	
Play-based learning strategies	Pearson Correlation	1	.379**
	Sig. (2-tailed)		.000
	N	350	350
Cognitive development	Pearson Correlation	.379**	1
	Sig. (2-tailed)	.000	
	N	350	720

The study's primary variables and their correlations are displayed in Table 14. The results indicate that there is a low positive and statistically significant connection ( $r=.391$ ,  $p>.000$ ) between play-based learning strategies and social development.

**Table 14: Relationship between play-based learning strategies and cognitive development**

		Play-based learning strategies Social development	
Play-based learning strategies	Pearson Correlation	1	.391**
	Sig. (2-tailed)		.000
	N	350	350
Social development	Pearson Correlation	.391**	1
	Sig. (2-tailed)	.000	
	N	350	720

The study's primary variables and their correlations are displayed in Table 15. The results indicate that there is a moderate positive and statistically significant connection ( $r=.391$ ,  $p>.000$ ) between play-based learning strategies and emotional development

**Table 15: Relationship between play-based learning strategies and emotional development**

		Play-based learning strategies	Emotional development
Play-based learning strategies	Pearson Correlation	1	.427**
	Sig. (2-tailed)		.000
	N	350	350
Emotional development	Pearson Correlation	.427**	1
	Sig. (2-tailed)	.000	
	N	350	720

### 3. Discussion

Strategies for teaching through play directly influence cognitive development through critical thinking, problem-solving skills, and social interaction. They promote exploration and manipulation of the environment, support active use of learning materials, and improve memory and attention in children (Yogman et al., 2018). Indeed, so far lot of studies have been conducted which indicates that play-based approaches also contribute executive function (EF), which includes self-regulation and adaptability; proven critical for initial learning achievement (Whitebread et al., 2009). In addition, play-based learning provides a mix of both formal and informal activities, helps in developing language and creativity as children communicate and work with one another (Pyle & Danniels, 2017). Children who have these experiences develop important cognitive and emotional skills, which serve them well when they enter school (Hassing-Das et al., 2020). The strategies of play-based learning are also an incredible contributor to the social and collaborative development of children, nurturing skills around interaction, working together, and empathy and care for others. Children practice communication skills, negotiate roles, and resolve conflicts through play, promoting positive peer relationships and social competence (Whitebread et al., 2012). This shape and prepares the children with empathy and understanding towards others as they test out the appropriate social norms in a context (Welding, 2022). Moreover, play state also allows children to deal with their sentiment and impact manages their stress, which helps the emotional law. Well, research suggests that structured plays activities, balanced with free play, create a dynamic equilibrium between self-directed learning and guided social interactions strengthening social-emotional skills overall (Hirsh-Pasek et al., 2008). Strategies utilizing play foster emotional growth in children as emotions are meant to be expressed in a healthy manner, largely owing to the safe space created during the activities. When children pretend and engage in imaginative play, they learn to resolve social conflicts, show empathy, and help them feel in control of themselves, all of which assist in emotional maturation (Whitebread et al., 2012). Participating in play assists children in coping with stress and frustration, which in turn assists in the development of resilience without the risk of real-life trauma (Denham, Bassett, & Zinsser, 2012). Furthermore, the collaborative aspect of play encourages children’s willingness to consider and appreciate other viewpoints, which develops the child’s emotional intelligence (Gray, 2013). These experiences, according to the studies, form the basis of healthy emotional wellbeing and social interactions which are important throughout a person’s life (Vygotsky, 1978).

### 4. Conclusion

In conclusion, play-based learning is a powerful tool for fostering children’s social, cognitive and emotional development. By providing opportunities for self-expression, role-play, and social interaction, it enables children to explore and understand their emotions within a supportive and engaging environment. This approach not only helps children build resilience but also enhances their empathy and emotional regulation skills, critical components of emotional intelligence. The collaborative nature of play encourages children to respect others' perspectives, facilitating meaningful social interactions that contribute to healthy emotional growth. Through these experiences, children gain skills that extend beyond the classroom, shaping their ability to form positive relationships and handle life’s challenges effectively. Ultimately, integrating play into learning supports a holistic approach to childhood development, preparing children for both social and emotional success.

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