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Artistic Activities and Developing Creative Thinking Skills among Children in Early Childhood

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ABSTRACT

The study explores the pivotal role of artistic activities in cultivating creative thinking skills during early childhood in identifying the profound impact of these activities on children's cognitive, emotional and social development. Grounded in Piaget's cognitive development theory and Gardner's theory of multiple intelligence has shown the influence of different factors that have included pedagogical approaches, parental involvement, cultural background, and the age and duration of artistic engagement. The literature review has shown the foundational principles of creative thinking programs in early childhood education, emphasising the need for innovative and balanced approaches. Also, with the help of a survey, 300 participants of data were gathered that were teachers and caregivers. Content analysis has been done to get subjective results. The study has included the importance of incorporating artistic activities into educational settings and parents' support, highlighting the consistent dynamics shaping creativity outcomes and advocating holistic foundations for children's future success.

INTRODUCTION

Developing creative abilities is crucial in modern societies, as most goals rely on mental abilities, particularly creativity. Artistic activities are essential in educational programs, building children's personality and social interaction (Alam, 2022). They help develop creativity and innovation, teaching them to deal with the world and express feelings positively. The need for creative capabilities is increasing as individuals and communities must adapt to new realities through creative initiatives and problem-solving (Sawyer & Henriksen, 2024). Torrance (1987) emphasized the significance of the first five years of a child's life for developing creative abilities, emphasizing the need for education to bridge theoretical ideas into practical works, fostering creativity, communication, and understanding of oneself and others (Torrance, 1987). Educational institutions should equip children with 21st-century skills for future careers, emphasizing the importance of early childhood years in learning these skills (Yildiz & Yildiz, 2021). The research highlights the significance of transforming kindergarten education from rote to creative, promoting creative thinking, teaching reading, and enhancing children's observation, research, and exploration abilities (Mahgoub; McRae, 2022).

The study explored the impact of artistic activities on creative thinking in third-grade primary school children, focusing on fluency, flexibility, originality, and detail skills.

Theoretical Framework

Piaget's Cognitive Development Theory

Piaget's theory has focused on the stages of cognitive development in children. It can be applied to understand how artistic activities contributed to the development of abstract thinking, symbolic representation, and problem solving skills during early childhood (Babakr *et al.*, 2019).

Gardner's Theory of Multiple Intelligences

Gardner's theory has proposed that individuals possessed multiple intelligences that has included musical spatial and bodily kinesthetic intelligences. Although this framework can be employed to examine that how different forms of artistic activities cater towards different intelligences, fostering a holistic development of creative thinking skills (Brualdi Timmins, 2019).

LITERATURE REVIEW

Foundations and Principles for Creative Thinking Program in Early Childhood

The creative curriculum focuses on building trusting relationships, providing individualized care, creating exploratory environments, ensuring children's safety and health, and fostering partnerships with families. Creativity is frequently viewed as a solution to both current and future challenges (Leggett, 2017; Nikkola *et al.*, 2022). This study presents early childhood creativity as part of a larger project called Progressive Feedback, an early childhood education and care research and development project (Nikkola *et al.*, 2022). The study of Fernandez & Feliu suggested that the incorporating Reggio Emilia philosophy in early childhood education to nurture arts development and critical thinking through an experimental project involving two-year-old students (Fernández-Santín & Feliu-Torruella, 2020). The study found that 45 university seniors lack knowledge and experience in creativity, suggesting the need for additional coursework or practice-based courses to familiarize teachers with diverse approaches (Ata-Akturk & Sevimli-Celik, 2023). OECD "Organisation for Economic Co-

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operation and Development" is examining 21st-century skills for students in educational settings, focusing on creating new value, reconciling tensions, and taking responsibility, focusing on self-regulation, self-efficacy, self-control, and problem-solving (Çakır *et al*., 2021). Research suggests multiliterate learning environments in ECE classrooms can revolutionize literacy pedagogy, challenging existing policies that restrict children's full literate lives in classrooms (Loyola *et al*., 2020).

Creative Thinking Skills

Creativity training improved students' ideation skills and cognitive flexibility, but did not enhance originality. Performance increased for the Remote Associate Test, highlighting implications for educational settings (Ritter *et al*., 2020). Visual arts teachers engage students with engaging projects, teaching persistence and persistence. They teach craft and craft-related habits, while also exposing students to the community and institutions shaping the art world (Winner *et al*., 2020). Moreover, it has been documented that high-quality visual arts pedagogy, concerns about perceived discrepancies between educational rhetoric and classroom application have been frequently raised (Lindsay, 2021). ECEC provides children with diverse opportunities to engage in arts, music, and other cultural aspects, fostering creative thinking, emotional expression, and play (Ruokonen *et al*., 2021).

Artistic Activities

Drawing is a crucial aspect of preschool curricula, fostering socio-emotional development and excitement in children through the production of various forms (Zakaria *et al*., 2021). Early childhood is crucial for a child's creative potential, as they master visual activities like drawing, demonstrating their visual literacy and mastery of graphic skills under teacher guidance (Nazokat *et al*., 2021). Creativity is crucial in complex scientific processes, challenging to identify and measure. Enhancing students' creativity can be achieved through specific education programs (Ozkan & Umdu Topsakal, 2021).

Age of the Child

Researchers in Malaysia found that digital games can enhance creativity skills, critical thinking, knowledge transfer, digital experience acquisition, and positive learning attitude in preschool children aged 3-6 (Behnamnia *et al*., 2020). The study found that mind mapping in children aged 48-72 months can enhance their critical thinking abilities, with no significant difference between pre-test and post-test scores, suggesting its potential in education (Polat & Aydın, 2020). STEAM education is most effective in early childhood, boosting children's motivation and career linkage. However, teachers often focus on soft skills, affecting sustainable STEAM abilities and teacher professional development. Innovative STEAM practices also impact teacher professional development, enhancing competences in 3-6-year-olds (Monkeviciene *et al*., 2020).

Duration of Artistic Engagement

The impact of science activities on the creativity of male preschool children. 30 children were randomly assigned to experimental and control groups, using Torrance's Test of Creative Thinking for measurement. The study aims to demonstrate the potential of creativity in education (Mirzaie *et al*., 2009). School-based art therapy helps children with various disorders, such as asthma, behavioral disorders, and learning disorders, through visual arts media. A study aimed to identify and synthesize interventions for children aged 5-12 using various media (Moula, 2020). By age 5, children develop new representational abilities, allowing them to expand their imaginations, love pretend games, and explore through fantasisation and experimentation (Kapitany *et al*., 2022). Research indicates a correlation between creativity and leisure or artistic activities in educational settings of different ages, with early participation in youth fostering better creative responses (Chacón-López & Maeso-Broncano, 2023). The study aimed to evaluate the effectiveness of drawing as an emotion regulation technique in children aged 7-10. It compared three drawing conditions: vent, free, and distract, and found that drawing improved moods more in distraction conditions, especially for children with medium emotional comprehension. The study also found that drawing's effectiveness was influenced by children's perceived competence (Brechet *et al*., 2022).

Parental Involvement

Child-friendly schools prioritize safety, cleanliness, and a nurturing environment, respecting student rights and protection from violence, and involve student participation in planning, policy, learning, supervision, and complaint mechanisms (Marcos *et al*., 2020). Creativity is crucial in various aspects of life, including entertainment, health, politics, culture, and social, as it ensures the development of a dynamic world (Lian, 2020). The Reggio Emilia approach emphasizes the importance of parental involvement in early childhood education for a child's psychosocial development and overall well-being (Kołodziejski & Butvilas, 2021). Mother's age and profession positively influence young children's fluency and novelty in motor creativity, while gender, age, or parents' age, education, or occupation are not significant predictors (Karaca *et al*., 2020). Family-related factors impact children's mathematics achievement in Finland differently, with some areas minimizing their impact on educational outcomes (Harju-Luukkainen *et al*., 2020).

Educational Setting

Art and creative activities enhance intellect, creativity, and mental health, and can be integrated into education through a semantic approach (Kashekova *et al*., 2021). The M3 technique is a safe and appealing method for enhancing early childhood art skills through drawing, cutting, and pasting activities (Kustiawan, 2021). Arts-based medical education can enhance clinical skills, foster creativity, and allow students to express their subjective

impressions during OSCEs (Gilbert *et al.*, 2022). Art-based activities like body painting, clay modeling, and drawing can enhance clinical education by engaging students, improving clinical acumen, and enhancing visual understanding of the human body (Salama *et al.*). A conducive painting environment and suitable teaching methods are vital for preschoolers to develop their artistic abilities, which is vital for their overall growth (Liu & Wu, 2023).

Cultural Background

The study inferred cultural background from parent-reported language spoken in each student's home from Kindergarten through secondary school, a key aspect of ethno-cultural background, consistent with previous Canadian-based behavioral research (Guhn *et al.*, 2020). Artistic activities promoting indigenous children's language, culture, and Cosmo-Vision in education can enhance teaching and learning, fostering respect and appreciation for diversity (Del Carpio, 2021). Artistic and creative activities foster students' humanistic culture, boost learning motivation, enhance their emotional and figurative personalities, and enhance their creative potential (Kai, 2021). Preschool fine arts education promotes creativity, learning, self-exploration, social integration, and a positive environment for young children, fostering self-expression, cultural understanding, aesthetics, and positive mood (Egan, 2020).

METHODOLOGY

The research methodology has followed quantitative analysis and content analysis in which the survey has been done from the 300 participants that are teachers and caregivers. Also content analysis was done from different research journals and case studies for getting more detailing and subjective results.

Quantitative Analysis

The study has found that the early childhood development is significantly influenced with cultural exposure, artistic engagement and creative thinking skills. The mean age of the population is 1.74, and children are exposed to diverse cultural traditions and languages. Artistic activities are highly valued, with satisfaction, educational programs have shown high results. However, these activities have created positive impact in their daily routines, problem-solving skills, and creative thinking abilities. The presence of a creative thinking program in early childhood is moderately implemented indicating positive perception of art in education.

Table 1: Descriptive Statistics

	Mean	Std. Deviation
Age	1.74	.438
Language Spoken at Home:	3.00	0.000
Cultural Traditions Exposure:	1.00	0.000
Influence of Cultural Art Forms:	1.00	0.000
Cultural Celebrations Participation:	1.00	0.000
Regularly expose my child to cultural content (e.g., books, TV shows, movies) representing diverse cultures	1.00	0.000
Celebration of Cultural Festivals:	1.49	.864
My child is exposed to languages other than our primary language at home (e.g., through friends, community, school)	1.00	0.000
Involvement in Artistic Activities:	1.00	0.000
Support for Creative Exploration:	1.00	0.000
Attendance at Art Events or Performances:	1.00	0.000
Duration of Artistic Engagement:	1.00	0.000
Frequency of Artistic Activities:	1.00	0.000
Preferred Time for Artistic Activities:	1.00	0.000
Duration of a Typical Artistic Session:	1.00	0.000
Variety in Artistic Activities:	1.00	0.000
Impact of Artistic Activities on Daily Routine:	1.74	.439
Frequency of Artistic Activities in the Educational Setting:	1.41	.493
Type of Artistic Activities in the Educational Setting:	1.80	.403
Satisfaction with the Educational Setting's Artistic Program:	1.00	0.000
To what extent do you observe an improvement in your child's problem-solving skills after engaging in artistic activities?	4.00	0.000

How would you rate your child's ability to think creatively after participating in artistic activities?	4.88	.326
Observation of Problem-Solving:	1.00	0.000
Creativity in Everyday Tasks:	1.30	.458
Expression of Original Ideas:	1.81	.393
Innovation in Play:	1.93	.250
Transfer of Creative Skills:	1.75	.432
Creative Thinking Program in Early Childhood	2.26	.936

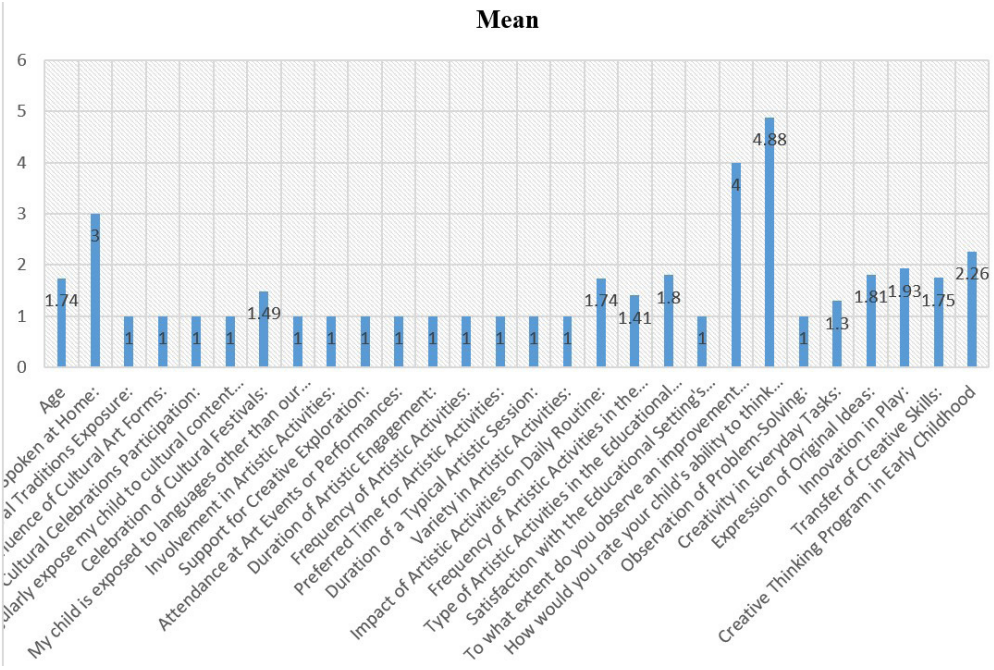

Figure 1: Mean

Correlation Analysis

The correlation matrix has shown a significant relationship among creative thinking programs in early childhood, cultural background, artistic engagement, educational setting, creative thinking skills and age. As there is a strong positive correlation between presence of a creative thinking program and creative thinking skills ($r = 0.737$, $p < 0.001$). Also there was a positive correlation is found between presence of a creative thinking program and cultural background of the respondents ($r = 0.352$, $p < 0.001$), indicating that those with more diverse cultural background are more likely to report the existence of creative thinking programs in early childhood. Conversely, a negative correlation is evident between the presence of a creative thinking program and engagement in artistic activities ($r = -0.345$, $p < 0.001$). Furthermore, there is a positive correlation between the presence of a creative thinking program and positive perception of educational setting ($r = 0.296$, $p < 0.001$), the existence of such programs are more likely to have positive perceptions of the educational improvement. Also there was a negative correlation among age and cultural background ($r = -0.708$, $p < 0.001$), artistic engagement ($r = -0.566$, $p < 0.001$), and creative thinking skills, suggesting that older respondents have less diverse cultural background and perceive lower engagement in their children.

Table 2: Correlations

		Creative Thinking Program in Early Childhood	**Cultural Background**	**Artistic**	**Educational setting**	**Creative Thinking Skills**	**Age**
Creative Thinking Program in Early Childhood	Pearson Correlation	1	.352**	-.345**	.296**	.737**	-.128*
	Sig. (2-tailed)		.000	.000	.000	.000	.026

Cultural Background	Pearson Correlation	.352**	1	-.595**	.601**	.476**	-.708**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
Artistic	Pearson Correlation	-.345**	-.595**	1	-.299**	-.077	.417**
	Sig. (2-tailed)	.000	.000		.000	.183	.000
Educational setting	Pearson Correlation	.296**	.601**	-.299**	1	.644**	-.566**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
Creative Thinking Skills	Pearson Correlation	.737**	.476**	-.077	.644**	1	-.253**
	Sig. (2-tailed)	.000	.000	.183	.000		.000
Age	Pearson Correlation	-.128*	-.708**	.417**	-.566**	-.253**	1
	Sig. (2-tailed)	.026	.000	.000	.000	.000	
	N	300	300	300	300	300	300

Paired Sample T-test

The study has found that there was a significant difference in the mean scores of creative thinking program in early childhood with age and cultural background. Age was perceived as having a significant impact, while cultural background was perceived as having a substantial influence. These findings emphasise the importance of considering age and cultural background when evaluating the perceived impact of creative thinking programs in early childhood, reflecting the nature of these perceptions within diverse demographic contexts.

The study found that significant differences in the impact of creative thinking program in early childhood on artistic engagement and parental involvement. Artistic engagement had a significant difference of 1.26. Both factors have contributed uniquely towards a child's creative development, highlighting the nature of perceptions regarding creative thinking programs.

Artistic engagement had a significant difference of 1.14, while parental involvement had a significant difference of 1.26. Both factors contribute uniquely to a child's creative development, highlighting the complex nature of perceptions regarding creative thinking programs. Both factors play a crucial role in shaping a child's creative development.

Table 3: Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Creative Thinking Program in Early Childhood - Age	.520	1.083	.063	.397	.643	8.314	299	.000
Pair 2	Creative Thinking Program in Early Childhood - cultural Background	.90714	.90049	.05199	.80483	1.00946	17.448	299	.000

Table 4: Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Creative Thinking Program in Early Childhood - artistic	1.14	.964	.056	1.030	1.250	20.479	299	.000
Pair 2	Creative Thinking Program in Early Childhood - Parental Involvement	1.26	.936	.054	1.157	1.370	23.367	299	.000

Regression Analysis

The model summary has shown significant results, the coefficient of determination (R Sqaure) is 0.530 that has shown 53% of the variability in the creative thinking dependent variable that has been explained from other independent variables that was included within the model.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728a	.530	.524	.12720

In Anova the f statistic is 83.124 and the associated p –value is less than 0.000 that has shown overall significance of the regression model. The residential sum of squares is 4.773, with 295 degrees of freedom for the denominator. The total sum of square is 10.153 with 299 degrees of freedom. The F statistic is 83.124, and the associated p-value is less than 0.000, indicating the overall significance of the regression model. The residual sum of squares (SSE) is 4.773, with 295 degrees of freedom for the denominator. The total sum of squares (SST) is 10.153, with 299 degrees of freedom. These findings suggest that the model, with its chosen predictors, effectively explains a significant proportion of the variance in creative thinking skills, supporting the utility of the included variables in predicting the dependent variable.

Table 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.380	4	1.345	83.124	.000[b]
	Residual	4.773	295	.016		
	Total	**10.153**	**299**			

The ANOVA results has shown the regression model that has included specified predictors that is statistically significant. The model has shown a significant variance with dependent variable indicating the large F-statistics and P value 0.000. The predictors in the model has contributed significant to the prediction of the dependent variable confirming the model overall statistical significance.

The coefficients from the regression model provide valuable insights into the impact of Cultural Background, Educational Setting, Artistic Engagement, and Age on creative thinking skills. The constant term is -0.304, though not significantly different from zero (p = 0.224), it represents the estimated value of creative thinking skills when all predictor variables are set to zero.

Table 7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.820	3	1.607	89.161	.000[b]
	Residual	5.333	296	.018		
	Total	**10.153**	**299**			

Cultural Background has a significant positive impact on creative thinking skills, as evidenced by its coefficient of 0.763 (p = 0.000). This suggests that an increase in Cultural Background is associated with a higher predicted value of creative thinking skills. Similarly, Educational Setting exhibits a significant positive relationship with creative thinking skills, with a coefficient of 0.449 (p = 0.000). This implies that a more favorable educational setting is associated with increased creative thinking skills. Artistic engagement also plays a crucial role, showing a significant positive impact on creative thinking skills, with a coefficient of 0.671 (p = 0.000). Lastly, Age has a positive impact on creative thinking skills, with a coefficient of 0.145 (p = 0.000), indicating that as age increases, creative thinking skills are predicted to rise.

Table 8: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.304	.249		-1.219	.224
	Cultural Background	.763	.102	.511	7.500	.000
	Educational Setting	.449	.038	.612	11.808	.000
	Artistic	.671	.126	.267	5.344	.000
	Age	.145	.025	.344	5.884	.000

Content Analysis

Pedagogical Approaches and Philosophies

Art-based programming is a highly effective method for teaching creativity, as it promotes meaningful learning through enjoyable activities (Hoffmann *et al*., 2021). Reggio Emilia's approach promotes a nurturing environment that enhances the potential of children, thereby increasing their chances of success (Yufiarti *et al*., 2022). Advanced pedagogical and information technologies are essential for teachers in today's educational process. Interactive techniques in lessons can enhance training effectiveness and assist in responsible tasks like student selection and skill formation for independent life (Shavkatovna, 2021). Recent research suggests a 'balance' between child-centered and teacher-directed curricula yields best child outcomes (Veraksa *et al*., 2023). The educational opportunities of distance education programs for older preschool children during quarantine, using theoretical analysis, surveys, experience analysis, children's product analysis, and parental feedback (Trubavina *et al*., 2021).

Creative Thinking Skills and Training

The study found that a one-year higher education creativity training program significantly improved students' creativity performance and ideation skills, compared to a control group (Ritter *et al*., 2020). Creativity is a crucial skill for human development, recognized by UNESCO's International Bureau of Education as a key future competence (Sun *et al*., 2020). Children's visual literacy in children's literature, focusing on two visually impaired girls who read My Little Pony on you tube kids. Results suggest that children appreciate digital literature for imagination and philosophy (Trihastutie, 2023). Visual art interventions significantly enhance toddlers' oral language skills and creative thinking, resulting in improved narrative structure, richer vocabulary, and increased discussion participation (Mogro-Wilson & Tredinnick, 2020). Art in the classroom enhances creativity, critical thinking, and learning capacity, improving students' attitudes, worldview, and promoting involvement, collaboration, and sociability (Pappas, 2022).

Artistic Activities in Early Childhood

Artistic installation sessions in early childhood education allow students to learn scientific content by experimenting with objects and understanding the processes involved in their actions (Burnard *et al*., 2022). Art therapy, music therapy, and mindfulness can enhance motivation and alleviate anxiety in students pursuing early childhood education careers in distance learning settings (López-Manrique, 2021). The integration of Visual Arts, Music, Dance, and Theater in Early Childhood Education, Elementary School, and High School can significantly enhance students' social, affective, emotional, and psychomotor development (Elpus, 2022).

Parental Involvement and Sociocultural Factors

Artist involvement in early years' settings can significantly improve children's learning and development by involving parents, careers, practitioners, and students in creative activities (Wickett, 2022). The integration of Visual Arts, Music, Dance, and Theater in Early Childhood Education, Elementary School, and High School can significantly enhance students' social, affective, emotional, and psychomotor development (Halverson & Sawyer, 2022). Craft art fosters self-concept development, collaborative skills, cultural identity, and appreciation in children by connecting their knowledge, interests, and experiences, promoting critical thinking and problem-solving (Mayar, 2022). Art activities in early childhood foster creativity and development, allowing children to express themselves freely and create new, developed creations through visual, performance, and music activities (Anggraini & Yuwono, 2022).

DISCUSSION

Enhancing children's creativity through art activities is crucial for early childhood growth and development, as it facilitates fun learning and promotes a child's dominance over learning (Anggraini & Yuwono, 2022). The analysis has shown that the creative thinking program in early childhood have been influenced through factors like cultural background, artistic engagement, educational setting and age that has been highlighted through interconnectedness in shaping creativity outcomes. Children need more free play and arts integration, while mothers feel time and curriculum constraints limit this, impacting future education curricula and collaborative initiatives (Nilson *et al*., 2013). The study has also found that there were significant differences in perceptions of creative thinking programs that was based on age and other demographic factors emphasising the importance of factors in the program effectiveness. Participatory orientation, characterized by children's concern for and intention to change situations, is strongly linked to creative thinking abilities, but rare in adult social situations (Nikkola *et al*., 2022). Those factors have influenced early childhood creative development and highlighted that how these dynamics help educators, policymakers, and parents in supporting and nurture young children's potential. The role of embodied movements and interactive play in early childhood creativity. Infants as young as one-year-old have shown evidence of original ideation through movement-based tasks. Embodied creativity may supplement traditional measures; as young children are more likely to represent their inner thoughts through movement. Future experimental research is suggested (Frith *et al*., 2019). Arts education in early childhood should foster creativity, holistic development, and aesthetic appreciation in children. It should be a fun, relaxing, and enjoyable subject that encourages children to explore their identities and understandings of the world (Jenson, 2018). Early childhood education is crucial for children's cognitive, physical, emotional, and social development, and can be enhanced by incorporating new steam concepts (Tabiin, 2020). Parents often engage in

"concerted cultivation" of culturally enriching activities for their children, but their ability to do so varies based on social class, with those lacking resources often less successful (Kisida *et al*., 2018). Teachers' director roles don't significantly influence creativity-fostering behavior scores; onlooker-stage manager and co-player roles predict it. Age, professional experience, class size, and role influence creativity-fostering behavior (Tok, 2022).

CONCLUSION

The study explores the impact of artistic activities on creative thinking skills in children, highlighting the importance of foundational principles in early childhood education programs. It has emphasised the interconnectedness of factors like educational settings, parental involvement, cultural background, and child age. The findings have found a balanced approach in program design and implementation, emphasising the role of artistic engagement, duration and parental involvement in fostering the creative thinking.

Implications

• The study emphasise the significance of incorporating artistic activities in early childhood education programs, enabling educators in developing creative curriculum that has been aligned with cognitive development theories and diverse pedagogical approaches.

• Parental involvement significantly enhances creative thinking skills in children that has required strategies like workshops, informational sessions, and resources to support this at home, promoting their children development.

• Teachers should utilize technological advancements to enhance their ability to create art-based activities for early childhood development.

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