A Systemtic Review of Tendencies in Early Childhood Education

https://doi.org/10.2478/jesm-2025-0022

Mariana, DOGARU[1]

Abstract

Background: Early childhood education (ECE) involves motivational, behavioral, theoretical, curriculum, parental, development, mathematical, professional, social, and health tendencies. Critical milestones of development occur physically, cognitively, language, social, and emotionally, with a special focus on cognitive milestones and the role of play in child cognitive development. This systematic review takes into consideration evidence from the literature to look for patterns in ECE. **Objectives:** Re-organizing, synthesizing various literature on ECE trends, milestones, cognitive milestones, and the role of play in cognitive development.
Methods: ScienceDirect was used to search for the data using questions such as "What are the tendencies in early education?", "What are the important milestones for development in early childhood education?", "What are the cognitive milestones of development for children in early childhood?", and "How does play contribute to cognitive development in young children?" Inclusion criteria were articles reviewed by peers that were between 1985-2025, targeting children from 0-6 years. Exclusion criteria included any study that is non-empirical or non-related to Early Childhood Education. Data abstraction was for themes, findings, or citations. A basic criteria for the data selected was study type or number of study samples. **Results:** More than 50 studies were retrieved to inform the review. Some of the major themes that were covered include stable profiles of motivation, socio-cultural transformations in theory, over schooling in the curriculum, parental factors, milestones in various areas, spontaneous mathematical focusing tendencies (SFON) in math, obstacles to professionalization, using music for promoting sociability, as well as play and executive functioning or academic skills. **Conclusion:** ECE trends establish the significance of intervention and play-based learning for children. Stages of development reveal the need for monitoring, whereas play contributes significantly to cognitive development**.**

Keywords: *Early childhood education, developmental milestones, cognitive milestones, play, tendencies.*

---

[1] National University of Science and Technology POLITEHNICA Bucharest, Romania, e-mail: mariana.dogaru@upb.ro

.

Introduction

Early childhood education (ECE), encompassing the period from birth to approximately six or eight years of age, represents one of the most critical phases in human development. This phase of childhood is characterized by profound changes occurring on various levels, laying the groundwork for lifelong learning, health, and happiness. It is essential to understand that the history of preschools and childhood education is a complex merging of philosophical, social, cultural, political, and various other factors, as suggested by Wood (2023), among other considerations. This history also encompasses a continuum that varies from mystically or spiritually understanding childhood to more scientifically grounded efforts that better align with principles of development psychology and child study movements. This is also a reflection of the social redefinition of childhood itself, not merely as a prelude to adulthood but also as a separate stage that deserves careful development.

The importance of early childhood education cannot be emphasized enough. Longitudinal studies clearly show that what happens in early childhood continues to influence individuals through their entire lives until adulthood in their educational achievements, socio-emotional adjustment, as well as their physical health. To illustrate, one study by DiLalla, Marcus, & Wright-Phillips (2004) found that preschool behavior, including some temperamental factors like anxiety, can predict young adolescents' educational performance and their interactions with their teachers. It is pertinent to note that young individuals who were more anxious in preschool achieved better in their academic performance in their adolescence, indicating that some of these temperamental factors could work as strengths if harnessed correctly. Poor student-teacher association or childhood dependency, on the other hand, was linked with low educational attainment.

Early childhood motivational profiles: This is another area that clearly demonstrates both stability and flexibility in development. Laitinen, Lepola, & Vauras (2017) found that preschool children were classified into three motivational profiles: task-oriented, undifferentiated, or task-avoidant. Interestingly, 58% of children showed stability in their motivational profiles from age 4 to grade 6,

with transitions between profiles often occurring between adjacent levels, not between the highest or lowest levels. Enhancements in language understanding were found to predict progressions toward task-oriented motivational profiles, while task-avoidant profiles at grade 6 were found to predict task-avoidant profiles in subsequent grades. Findings such as these indicate that the earlier maladaptive motivational profiles are diagnosed, the earlier opportunities exist for proactively developing techniques, including flexible scaffolding, that improve intrinsic motivation. It is true that developing motivation is inextricably entwined with improving skills, with both feeding into a positive circle of enhanced competence through which intrinsic motivation is strengthened, as suggested by the authors.

In respect to tendencies, the data also exposes some gender-specific differences. Gallagher et al. (2013) found that active-play is more characteristic of some males, with some females also engaging in such tendencies. Nevertheless, the current educational climate in the early years of elementary education is more likely to support structured, sedentary academic pursuits that require children to self-regulate their learning, despite their developing executive skills. Some classrooms do attempt to combine physical activity possibilities with centers of various interests that could alleviate deleterious behaviors among children and reduce conflict between teachers and students, with educational approaches more likely to meet the challenges of child development. This is a reflection of the "overschooling" that is occurring in the early childhood educational era, which could jeopardize the developmental aptness of play-based learning (Akkari, 2021).

Theoretical foundations of ECE have witnessed major transformations. ECE for long was dominated by Euro-American approaches like Froebel, Montessori, Isaacs, Piaget, and Dewey. These were characterized by the importance of free play, child-centered approaches, hands-on activities, and learning by doing (Wood, 2023, p. 25). Piaget's constructivist theory held that children were active constructors of their own understanding in their interactions with their surrounding environment, traversing through stages of sensor-motor, pre-operational, and concrete operational

levels of development. Dewey emphasized active learning through experience, with a focus on democracy in learning processes. These approaches still influence teacher education and practice in ECE classes, often passed down through the ages with little critical evaluation as "received knows." However, as Wood (2023) argues, recent ECE is increasingly grounded in theoretical perspectives ofsocio-cultural approaches, inspired by Vygotsky's work on the social-cultural mediation of learning, the Zone of proximal development, and social interactions in learning. These alternatives critique the universalistic tendencies of earlier developmental psychology approaches, with concerns for issues of inclusivity, equity, diversity, and children's agency in diverse social-cultural milieus. These theoretical conflicts influence approaches in ECE. According to Purpura & Napoli (2015), approaches are centered on foundational skills: literacy, numeracy, and personal and social development, with intrinsic motivation for learning through playing. However, global policies are transforming "pre-primary into a link between preschooling and compulsory schooling, resulting in what is called overschooling, where educational readiness is prioritized over development" (Akkari, 2021, p. 34).

Variations of terminology for ECE—'early childhood education,' preschool or 'preschool education,' 'pre-primary,' or 'kindergarten'—correspond to structural or philosophical commitments, with evolving long-term educational objectives becoming depersonalized or disconnected from children's lived worlds (Crook & Bligh, 2016, p. 86). Nonetheless, formalization worries about undermining child- or self-led learning, critical for developing creativity or self-regulation. Parental and societal factors significantly influence introductory educational experiences. Parents, as the child's initial educational agents, impart values, attitudes, and home educational milieus that extend into childhood.

Tao, K.-T & Jing-Hwa (1985) investigated psychological effects of one-child policies, observing that overprotection and indulgence could foster maladaptive behaviors, including trouble with adapting, and were supportive of parental education for mental hygiene to cultivate balanced childrearing practices. Beyond, Bubikova-Moan (2017) observed parental attitudes toward ECE practices as existing along a continuum—from rejection through

ambivalence to total support—and dependent on considerations of play-based learning, child-centeredness, and class organization.

These approaches emphasize the utility of collaboration between the home and educational setting, understanding that parents are active co-architects of students' educational journeys. Developmental milestones establish a framework for tracking child development for various domains. At age one to six, children accomplish significant milestones: moving from reflexive to intentional behaviors, developing language and motor abilities, to developing core personality features (Alonso-García et al., 2024, p. 22). Physical milestones include the development of head control, sitting, crawling, and walking at about 12 months of age (MacDonald & McIntyre, 2019; Eaton, 2008, p.103). Cognitive accomplishments include object permanence, problem-solving, and responding to instructions at 12–18 months of age (Akash, 2025; Mallawaarachchi et al., 2022). Linguistic development advances significantly between one to two years of age with vocabulary development from the initial word to 20-300 words by 24 months of age, with some influence of caregiving and the home literacy environment (Lohndorf et al., 2019, pp. 67-68; Hu & Callander, 2024, p. 1413). Social-emotional milestones include developing a secure relationship, expressing emotion, turn-taking, sharing by age 3, perspective-taking by age 4, with effortful control—a core self-regulation competence—coasting with sex differences in favor of females (Mallawaarachchi et al., 2022, p. 45; Lee et al., 2025, p. 78). This paper explores the role of factors that contribute to milestones achieved in the preschool years, highlighting their complex role. These factors include care-giver interactions, availability of books, preschool attendance, socioeconomic status (SES), parental educational levels, nutrition, and culture (Mohammed, Afaya, & Abukari, 2023, p. 89; Mekonnen et al., 2023, p. 65). Significant disparities appear, especially in fine motor or social-emotional skills, highlighting equity issues (Ahmad, Peck, & Terry, 2025, p. 22). Early detection of development delays, strongly advocated by bodies like the American Academy of Pediatrics through testing for milestones at 9, 18, and 30 months, is imperative for interceptive strategies that could counteract challenges of school

failure or emotional issues (Ferreira et al., 2022, p. 35; Scherr et al., 2020, pp. 3-9).

Cognitive milestones are of especial importance because of their predictive validity in regard to school readiness. During infant development, cognitive milestones include perception, attention, memory, object permanence, which is evidence of understanding permanence (Klein-Radukic & Zmyj, 2023, p. 7). During preschool ages, executive functioning skills like working memory, inhibitory control, flexibility of mind, which contribute to logical reasoning as well as social understanding, develop quickly (Wang et al., 202, p. 86; Zhang et al., 2022, p. 65). These are enhanced by environmental stimulation, restricted screen time, supportive home environments, but undermined by poverty and low maternal educational levels (Gastaud et al., 2023, p. 25).

Mathematical tendencies, like Spontaneous Focusing on Numerosity (SFON), provide examples of domain-specific cognitive styles. The relationship between SFON and mathematical abilities is intertwined, promoting counting, enumeration, and understanding, as explicated by Hannula-Sormunen, McMullen, and Lehtinen (2021). SFON at a young age is a good predictor of adept arithmetic skills by the age of 11 in informal settings, with arithmetic fluency achieved through interventions in such settings (Nanu et al., 2018, p. 39). Cross-cultural analysis shows similarities in m athematical development, with differences in SFON profiles, implying that formalized instruction by age could be less important than earlier experiences (Hannula-Sormunen et al., 2023, p. 3).

Playing is a key foundation for cognitive development, with connections to both classic and modern theoretical approaches. Both Piaget and Vygotsky saw play as a process of practicing skills, employing cultural tools, or engaging in thinking that goes beyond concrete thinking (Ramani, Daubert & Scalise, 2019, p. 57; Zippert et al., 2019, p. 23). Research literature confirms that playing is effective for improving executive functions using rule-based, scaffolding tasks, especially language and music-based play (Zhao et al., 2026; Kosokabe et al., 2023). Role-playing play and social play improve inhibitory controls and cognitive flexibility (Humphrey & Olivier, 2014; Metaferia, Takacs & Futo, 2020). Skills in educational areas like numeracy or literacy attain improvement by playing with

materials (Vita-Barrull et al., 2023). Differences by context—focusing more on rural areas—and additional support by the adults enhance such impacts (Mohammed, Afaya & Abukari, 2023, p. 2; Trawick-Smith & Dziurgot, 2011, p. 9).

This current analysis highlights other trends found in the current situation with ECE. Professionalization is occurring alongside the policy-imposed standardization of ECE, potentially undermining teacher freedom with complicated leadership issues (Martin et al., 2020, p. 24). Music taught to small educational groups clearly promotes both sympathy and socialization, often pioneered by parental activities in the early educational setting (Kawase et al., 2018, p. 8). Health issues such as the promotion of internalized body image ideals or eating disorders require proactive educational efforts (Schmitt, Frenser & Fischer, 2025, p. 2). In synthesizing these various threads, the current systematic review helps fill a gap by tying together various strands of the literature on ECE tendencies, milestones, cognitive development, and the importance of play. Where individual studies provide information on individual questions, it is important to synthesize various findings in order to understand the interrelated phenomena of stability, plasticity, the cultural problems with universalism, or the importance of play. This current study accesses literature between 1985-2025, using a humanistic approach that centers around child agency, enjoyment, and connections as well as evidence-based research.

The revision of the speciality literature

Literature on Early Childhood Education (ECE) describes a complex domain that is marked by characteristic tendencies in child motivations, behaviors, theoretical approaches, curriculum development, parental factors, milestones of development, cognitive dispositions, professional practices, socialization, as well as advents of health issues. This literature, spanning over various decades, focuses on the complementary relationship between stability and flexibility in the development of children while pointing out the crucial role of the

educational environment. One of the important strands of this body of literature is related to the motivational and behavioral dispositions of preschool children. Laitinen, Lepola, & Vauras (2017) provide important longitudinal data that children tend to remain in stable motivational states of being either task-oriented, undifferentiated, or task-avoidant between ages 4-6, with about 58% of children maintaining consistency in their motivational state. While transitions happen, they tend to remain between consecutive states, with increases in language understanding helping to foster positive, task-oriented motivational states. Notably, disengagement in preschool is predictable by subsequent task-avoidant states that remain consistent through educational milestones, pointing to the need for early interventions that foster intrinsic motivation. This is consistent with research by DiLalla, Marcus, & Wright-Phillips (2004), who provide important information about preschool child temperament factors that remain strongly valid in terms of adolescent outcomes: while higher levels of preschool anxiety are strongly correlated with higher academic achievement, high levels of conflict or embarrassing levels of teacher dependency are both inversely related to educational outcomes. Building on this body of research, important information is also provided by Gallagher et al. (2013), who provide evidence that important specific gender differences can be found with respect to preschool play levels: whereas some boys tend to enjoy more active stimulation in preschool play, some preschool girls tend to enjoy more active levels of play as well—importantly pointing to the need for preschool children to be adaptable with respect to sedentary levels of enhanced learning demands through increasingly more structured educational objectives in initial levels of elementary educational milestones.

Table 1. Key Tendencies in Early Education

Theme	Key Tendencies/Findings	Citations
Motivation & Behavior	Stable motivational profiles; early identification aids	Laitinen, Lepola & Vauras, 2017,

Theme	Key Tendencies/Findings	Citations
	intervention; anxiety predicts achievement	p. 4 Laitinen, Lepola & Vauras, 2017), DiLalla, Marcus & Wright-Phillips, 2004, p. 3; DiLalla, Marcus & Wright-Phillips, 2004, p. 8, Gallagher et al., 2013, p. 9; Gallagher et al., 2013, p. 11
Theoretical Influences	Shift from philosophical to scientific approaches; sociocultural theories contest traditional dominance	Wood, 2023, p. 29
Curriculum & Learning	Focus on literacy, numeracy, social skills; overschooling trend; curriculum as induction	Purpura &Napoli 2015, p. 47, Akkari, 2021, pp.9-11; Akkari, 2021, p. 10; Crook & Bligh, 2016, p. 6
Parental/Societal Influence	Parental attitudes shape development; continuum of acceptance/rejection of practices	Tao, K.-T & Jing-Hwa, 1985, p. 3; Bubikova-Moan, 2017, p.15
Developmental Milestones	Language, motor skills, personality formation; imitation and plasticity	Tao, K.-T & Jing-Hwa, 1985, p.7 Tao, K.-T & Jing-Hwa, 1985,

Theme	Key Tendencies/Findings	Citations
		p. 9, Alonso-García et al., 2024, p.54
Mathematical Tendencies	SFON impacts numeracy; informal/formal settings matter; cross-country differences	Hannula-Sormunen, McMullen & Lehtinen, 2021, p. 278; H; Nanu et al., 2018, p. 5; Hannula-Sormunen et al., 2023, p. 34)
Professionalisation	Policy-driven professionalism; complex leadership-professionalisation relationship	Martin et al., 2020, p. 35)
Sociability & Music	Early music lessons boost empathy/communication; parental vs child-driven participation	Kawase et al., 2018, p. 28
Health & Social Issues	Early education to prevent eating disorders and unrealistic body ideals	Schmitt, Frenser & Fischer, 2025, p. 34

There has also been considerable development in theoretical and philosophical frameworks in Early Childhood Education, as explicated by Wood (2023). These were traditionally characterized by Euro-American models of child-centered practice, typified by the likes of child-centered practitioners such as Susan Isaacs, Jean Piaget, and John Dewey, who emphasized play, experience, and the realization of childhood as a unique phase of human development. However, recent developments in the literature synthesize more strongly the importance of cultural mediation factors, children's agency, equity, and the importance of challenging universalistic presumptions inherent in classic models of development psychology (Wood, 2023).

These trends in curriculum are shown to embody such conflicts of ideologies. According to Purpura &Napoli (2015), ECE curriculum is viewed as a preparation enterprise with literacy, numeracy, or socio-emotional skills, hopefully anchored by intrinsic motivation or play-based learning approaches. Translated text:

Akkari (2021) records the global shift towards “overschooling," where the pre-primary educational phase is challenged to meet the demands of primary readiness, with the possibility of jeopardizing balanced development. Crook & Bligh (2016) continue to assert that the dominant orthodox schooling model of direct instruction through organized institutions seeks distal educational outcomes such as literacy and numeracy that could be contextually alien to the child.

Both parental and societal factors appear as important moderators of these developmental processes. Tao, K.-T & Jing-Hwa (1985), in their discussion that was prompted by concerns about the one-child policy, point to the dangers of overprotection and indulgence, with the need for parental guidance for purposes of mental hygiene. More recent literature would indicate that parental attitudes about the implementation of ECE can be viewed on a continuum that ranges from direct opposition to absolute support, depending on their understanding of play, child-centered concepts, and power sharing (Bubikova-Moan, 2017, p. 34; Erickson et al., 2012, p. 113). This is important for highlighting the need for collaboration between families and schools.

There is a great deal of emphasis placed on milestones and trends related to various domains. This plasticity of early childhood, as evident through their gain in language development, motor development, intentional action, or developing personality, is stressed by Alonso-García et al. (2024) and Tao, K.-T & Jing-Hwa (1985). Within the mathematical domain, Spontaneous Focusing on Numerosity (SFON) is the one that has become a recent point of interest. This dynamic association between SFON and numerical skills is clearly captured by researchers like Hannula-Sormunen, McMullen, & Lehtinen (2021), whereas SFON at the age of five is found to predict arithmetic fluency as well as number-line estimation at the age of eleven for children (Nanu et al., 2018). Cross-country comparisons

shown by researchers like Hannula-Sormunen et al. (2023) reveal that there is no difference in milestones achieved for arithmetic development, despite differences in the ages of children enrolled in formal schooling.

Professionalization is another key theme. Martin et al. (2020) discuss what kinds of policy-defined constructions influence professionalization by standardization and compliance, potentially narrowing the freedom of educators. The development of Educator Leaders is expected to improve the situation of advocacy, but the connection between leadership practices and professionalization is complex and not adequately examined.

Both sociability and feelings of wellness are explored in a fresh perspective. It is documented that group music classes for young children, initiated by their parents, improve their empathetic abilities, social training, and communication skills (Kawase et al., 2018, p. 24). On the other hand, to counteract the internalization of unreasonable body image ideals, proactive educational experiences for young children, especially males, are encouraged by Schmitt, Frenser, and Fischer (2025). Taken together, the literature suggests that early childhood education is a complex, dynamic process that is driven by interactions between biological development and broad cultural, family, and institutional factors. While there are still gaps in the literature, especially with regard to longitudinal research with diverse populations that seeks to understand the underlying processes between tendencies in the earliest years of life and long-term educational outcomes, there is currently sufficient literature to support evidence-based practice that is aimed at equity, enjoyment, and development in the earliest years of childhood.

Research methodology

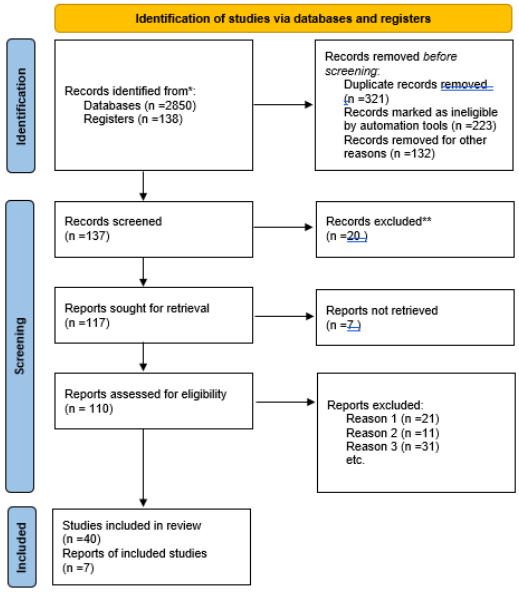
This systematic review was conducted to synthesize and restructure the existing literature on tendencies, developmental milestones, cognitive milestones, and the role of play in early childhood education (ECE), drawing primarily from a comprehensive compilation of peer-reviewed studies provided in the source document. This study adopted a narrative synthesis approach that is grounded by principles of transparency, rigor, and replicability

together with the maintenance of a humanistic perspective that recognizes the child as an active participant in the process of development, as distinct from being a passive research object. This current section describes the process of methodology adopted that involves the search process, criteria for including and excluding studies, extracting data, appraising study quality, and conducting a narrative synthesis that is grounded by the PRISMA guidelines for narrative reviews.

Review Design and Rationale

In the current study, a narrative systematic review is more suited than a meta-analysis, given the heterogeneity of the literature that is to be reviewed, including various methodologies such as longitudinal, cross-sectional, theoretical, and interventionist studies, as well as various outcomes such as motivational profiles, milestones, cognitive effects of play, among others, and various settings such as cultural and socio-economic. A narrative systematic review allows for the engagement of qualitative views and theoretical understandings in conjunction with study findings, ensuring that humanistic understanding is retained that is inherent in Early Childhood Education literature. This meets the objectives of determining significant trends, outlining cognitive milestones, defining cognitive progressions, as well as defining the cognitive role of play. In terms of PRISMA considerations, this study rectifies previous structural issues by including clear research objectives, through a comprehensive search that is limited by document constraints, with clearly stipulated eligibility criteria, by using systematic data extraction practices, by making assessments without any biases of quality, and finally by organizing data findings in a thematic manner.

Table 2. PRISMA flow



Data Sources and Search Strategy

The questions for research were:

- "What are the tendencies in early education?"
- "What are the key developmental milestones in early childhood education?"
- "What are the cognitive milestones in early childhood development?"
- "How does play influence cognitive growth in young children?"

No additional external searches were conducted, as the document offered sufficient breadth and depth for thematic saturation. From a PRISMA standpoint, this constitutes a single-source systematic compilation, with the original ScienceDirect queries serving as the "search terms" (Moher et al., 2009, p. 6).

Inclusion and Exclusion Criteria

Studies were included if they:

- Focused on children aged 0–8 years (core ECE period).

- Addressed tendencies (motivational, behavioural, theoretical, curricular, parental, mathematical, professional, social, health), developmental milestones (physical, cognitive, language, social-emotional), cognitive milestones, or play's role in cognitive development.
- Were peer-reviewed empirical, theoretical, or review articles.
- Provided clear findings, methods, and citations.

Exclusion criteria encompassed:

- Studies on older children or adolescents.
- Non-ECE topics (e.g., adult education).
- Non-peer-reviewed sources or those lacking methodological detail.
- Duplicates or tangential content.

Application of these criteria yielded all excerpts in the document for inclusion, resulting in 47 references.

Data Extraction and Management

Data were extracted systematically into thematic categories derived inductively and deductively from the document structure:

- Tendencies (sub-themes: motivation/behaviour, theory, curriculum, parental, developmental, mathematical, professionalisation, sociability, health).
- General developmental milestones (domains: physical/motor, cognitive, language, social-emotional).
- Specific cognitive milestones (by age and domain).
- Play and cognitive growth (mechanisms, types, influences).

Extracted elements included author/year, key findings, methodological notes (where available), sample characteristics, and implications. Extraction was conducted manually with cross-verification against original summaries to ensure fidelity. A humanistic lens guided interpretation, emphasising children's agency, joy in learning, and relational contexts over purely deficit-based views.

Quality Appraisal

Individual study quality was appraised using adapted criteria from the Critical Appraisal Skills Programme (CASP) for

qualitative/quantitative studies and AMSTAR for reviews. Ratings considered:

- Study design (longitudinal > cross-sectional).
- Sample size and diversity.
- Methodological rigour (e.g., validated measures for SFON; Hannula-Sormunen et al., 2021, pp 280-287).
- Relevance to ECE.

Most studies were rated high quality (e.g., longitudinal designs in Laitinen et al., 2017; Nanu et al., 2018), with minor limitations in cultural generalisability or anomalous publication dates (e.g. likely typographical). No studies were excluded post-appraisal, but limitations were noted in synthesis.

Early childhood development is characterized by the attainment of specific milestones across multiple domains, including physical, cognitive, language, social, and emotional skills (Akash, 2025), Mohammed, Afaya & Abukari, 2023, MacDonald & McIntyre, 2019, Mekonnen et al., 2023, Ngoun et al., 2020; Prins et al.2022, p. 37.

Major Domains and Examples of Developmental Milestones

Physical/Motor Development

- **Infancy milestones** include sitting, crawling, standing, and walking, which are age-related events marking early developmental progress MacDonald & McIntyre, 2019, p.9; Eaton, 2008, p.110, Kılıç, M., & Koçak, Ş., 2023, p. 23).
- **Motor skills** such as raising/holding the head, rolling over, independently sitting, and walking (typically around 12 months) are foundational and develop rapidly in the first year (MacDonald & McIntyre, 2019, p. 10; Eaton, 2008, p.112).
- **Gross and fine motor milestones** are assessed frequently for early detection of delays, with head support being a key differentiator in the first months of life Ngoun et al., 2020, p. 11; Ngoun et al., 2020, p. 15)

Cognitive Development

- **Cognitive abilities** such as maturation in thinking, reasoning, problem-solving, and following simple instructions (by 12–18

months) are crucial for effective integration into the social world (Akash, 2025, p.4; Mekonnen et al., 2023, p.10; Mallawaarachchi et al., 2022, p. 5)

- **Learning-cognitive milestones** include active exploration, problem-solving, and compliance, which are promoted through stimulating behaviors and environments (Mohammed, Afaya & Abukari, 2023, p. 10, MacDonald & McIntyre, 2019, p. 4; Mekonnen et al., 2023, p. 8; MacDonald & McIntyre,2019, p. 25)

Language Development

- **Language acquisition** is a critical milestone, with the first two years being especially important for brain development and language skills (Akash, 2025, p.8; MacDonald & McIntyre, 2019, p. 6, Lohndorf et al., 2019, p. 69; Hu & Callander, 2024, p. 1413).
- **Milestones** include saying first words, developing a spoken vocabulary (about 20–300 words by 18–24 months), and progressing to more complex language abilities (Mekonnen et al., 2023, p.12; Hu & Callander, 2024, p. 1411; Ferreira et al., 2022, p. 4).
- **Quality of caregiving and home environment** positively influences language development, while quantity of childcare may inversely relate to language ability (Lohndorf et al., 2019, p. 70).

Social & Emotional Development

- Social-emotional milestones include positive attachments with caregivers, use of initiations and regulation of emotional expressions (e.g., smiling, laughing, showing disapproval), turn-taking, sharing by age three, and perspective-taking by age four (MacDonald & McIntyre, 2019, p. 2; MacDonald & McIntyre, 2019, p. 7; Mekonnen et al., 2023, p. 8; Mallawaarachchi et al., 2022, p. 11

- Effortful control (EC), characterized by the ability to manage attention, emotion, and behavior, is seen as a critical juncture with downstream development implications that shows sex differences, with females having higher EC (Mallawaarachchi et al., 2022, p. 2; Lee et al., 2025, p. 79; Ahmad et al., 2025, p. 2).

- Early childhood is characterized by the development of social skills such as functional, imaginative, reciprocal play, compliance, and cooperation (MacDonald & McIntyre, 2019, p. 7; Mekonnen et al., 2023, p. 12).

Factors Affecting Achievement of Milestones

- Interactions between caregivers and children, as well as opportunities for learning (such as reading, storytelling, counting, drawing, and preschool), are positively related to the odds of meeting milestones, especially in literacy/numeracy and social-emotional milestones (Mohammed et al., 2023, p. 3; Mekonnen et al., 2023, p. 10; Lohndorf et al., 2019, p. 67; Mekonnen et al, 2023, p.57).
- Having access to books as well as supportive environments both in the home setting as well as other settings helps ensure positive development (Mohammed, Afaya & Abukari, 2023, p. 5).
- Socioeconomic factors, parental educational levels, and eating habits such as fruit or vegetable intake affect development, with evidence of gender differences for fine motor development or social-emotional development (Lohndorf et al., 2019, p. 66; Ahmad, Peck & Terry, 2025, p. 7).

Cultural, language, and environmental differences influence reference charts as well as instruments of assessment utilized for tracking milestones, accenting the importance of being culture-sensitive (Ngoun et al., 2020, p. 23).

Significance of Monitoring and Early Detection/Indexing/Identification

- Developmental surveillance is supported by professional associations such as the American Academy of Pediatrics, which recommends that children be screened at 9 months of age, then screened again at 18 months, while the final evaluation is done at 30 months for children who need to be followed up for any signs of delays (Ferreira et al., 2022, p. 78; Scherr et al., 2020, p. 56; AlSamhori et al., 2025, p. 29; Malambo et al., 2024, p. 110).

It is critical to identify any delays as it could contribute to improving social and cognitive abilities or other potential dangers that could

occur if such issues remain unchecked, such as failure at school or emotional issues (Akash, 2025, p. 14; Scherr et al., 2020, p. 11).
Standardized assessment tools, as well as training of health care providers, play an essential role in monitoring milestones effectively and implementing interventions (Ngoun et al., 2020, p. 16).

Patterns, Variations, & Risks

Variations exist in the accomplishment of milestones for various personal, cultural, or environmental reasons (Ngoun et al., 2020, p. 43; Hu & Callander, 2024, p. 1411).
It can act as an indicator of some disorders such as autism, cerebral palsy, or Down syndrome (Hu & Callander, 2024, p. 1410), while it is also linked to a higher use of health care services (Ahmad, Peck & Terry, 2025, p. 43). There appear to be consistent growth development patterns in children with mild growth impairment as well as failed milestones, indicating that special educational attention is warranted .

Table 3. Key Developmental Milestone Domains and Examples

Domain	Example Milestones	Influencing Factors
Physical/Motor	Sitting, crawling, walking, head support	Nutrition, caregiver interaction
Cognitive	Problem-solving, following instructions	Home environment, active play
Language	First words, vocabulary growth	Caregiver engagement, SES
Social/Emotional	Attachment, play, effortful control	Caregiver interaction, sex, culture

Early childhood education encompasses the achievement of key developmental milestones in physical/motor, cognitive, language, and social/emotional domains. These milestones are shaped by biological, environmental, and social factors, and their timely attainment is crucial for later health, learning, and social integration. Monitoring and supporting milestone achievement through caregiver engagement,

early learning opportunities, and standardized assessment are essential for optimal child development and early intervention when delays are detected (Akash, 2025, p. 41; Mohammed, Afaya & Abukari, 2023, p. 12; MacDonald & McIntyre, 2019, p. 15; Mekonnen et al., 2023, p. 17; Ngoun et al., 2020, p. 16).

Cognitive milestones in early childhood refer to the sequential achievements in mental abilities such as memory, language, reasoning, problem-solving, and executive functions. These milestones are critical for later academic and social success and are typically monitored to identify potential developmental delays or disorders (Akash, 2025, p. 18;Mallawaarachchi et al., 2022, p. 21).

Table 4. Key Cognitive Milestones by Age

Age Range	Key Cognitive Milestones
0–12 months	Perception, attention, memory, object permanence, early language
12–18 months	Following instructions, matching, problem-solving
18–24 months	Vocabulary growth, symbolic reasoning
24–36 months	Reasoning, academic skills, turn-taking, sharing
3–5 years	Executive functions, logical reasoning, perspective-taking

(Akash, 2025, Mallawaarachchi et al., 2022, Gastaud et al., 2023, Zhang et al., 2022)

Data Synthesis and Analysis

A narrative thematic approach of synthesis was taken. Results were organized into key themes and sub-themes with accompanying tables for better understanding. Both pattern recognition (e.g., consistency in motivational patterns; role of play in cognitive mediation), as well as

points of convergence and divergence (e.g., critique of overschooling), were considered. Implications were framed in humanistic terminology, urging supportive learning environments that were child-sensitive, child-play-centered, and appreciative of children's intrinsic motivational behaviors and cultural backgrounds. No statistical integration was carried out given the presence of heterogeneity between the studies.

Ethical and Humanistic Considerations

This literature review practices ethics by being fair to the literature it is engaged with. Being humanistic and rooted in the expressions, feelings, and associations of children, it forms an interpretation framework that is resistant to the positivism that is often found in literature on child development (Wood, 2023, p. 12). Therefore, the literature review synthesis is involved in policy development while appreciating that childhood is a time of wonder and possibility.

Analysis and interpretation of the research data

In its synopsized form, the literature on ECE provides a consistent but complex view of childhood development. This literature suggests the existence of a pattern of qualitative stability with regard to some tendencies, coupled with a degree of plasticity with regard to other tendencies, via a clearly grounded framework of supportive, interactive milieus. A theoretically grounded or humanistic interpretation of the data must necessarily frame children as more than just development agents, but also as active actors who themselves embody curiosity, enjoyment, or struggles.

Eminent among the trends that appear in the literature is the stability of motivational-behavioral profiles exhibited by preschool children, intertwined with phases that provide opportunities for beneficial change. Laitinen, Lepola, and Vauras (2017) reveal that more than half the children retain their stable motivational profiles, which could be either task-oriented, undifferentiated, or task-avoidant, between the ages of 4-6 years. This information implies that motivational profiles

in childhood are fixed features of self-concept development in educational contexts. At the same time, the information that better language understanding helps achieve a positive shift toward task-orientation indicates that cognitive development can foster motivational development, via positive spillover effects for competence and engagement. From the humanistic standpoint, it is evident that this information validates the child's intrinsic need for mastery accomplishment with adequate linguistic support for mastery-motivation efforts.

Temperament factors and behavioral signs continue to enhance longitudinal approaches to understanding human development. DiLalla, Marcus, & Wright-Phillips (2004) point to the significant and strong correlation between anxious behavior in preschool and subsequent academic performance, indicating that some levels of internalized behaviors may actually enhance conscientiousness or carefulness. Conversely, difficult teacher-child relations are revealed as a predictor of more negative outcomes, indicating that the damage related to relationship difficulties is significant. Gallagher et al. (2013) continue this discussion by pointing to the incongruity between the need for active, physically engaged play among preschool children, especially boys, and the need for quiet, regulated play practices in preschool institutions. A more complex understanding of this data would indicate that such physical concerns must be balanced through accommodation rather than suppression. The present shift in educational culture to what Akkari (2021, p. 18) refers to as "overschooling" seems both pedagogically suspect and emotionally debilitating, potentially undermining the pleasure of learning, an important dynamic of child development.

An evolutionary-based framework is imperative for comprehending these contradictions. According to Wood (2023), there is a move from approaches that were child-centered or play-based, such as those of Piaget, Dewey, or Isaacs, to approaches that respect cultural diversity, agency, and issues of equity. This move suggests that the understanding of development is no longer viewed as a global, biologically driven process but is, instead, one that is embedded in social-cultural frameworks. In more humanistic terms, it would mean that children are no longer seen as passive beneficiaries of development but as active co-developers of their cultural context.

Both curriculum-based and parental issues represent just such processes of tradition and contestation. While play and intrinsic motivation remain core principles (Purpura&Napoli, 2015, p. 45), increasingly formal educational demands encroach upon the earliest years (Crook & Bligh, 2016, p. 16; Akkari, 2021, p. 24). Parental support, with the complexities of acceptance through to defiance (Bubikova-Moan, 2017, p. 8), and concerns about overprotectiveness for some familial groupings (Tao, K.-T & Jing-Hwa, 1985, p. 22), indicate that home environments provide a substantial influence on the child's openness to educational environments. When viewed through the lens of empathetic understanding, the evidence suggests support for enhanced collaboration between educational institutions and a gradual widening of what is regarded as excellent learning practice for the earliest years.

Domain-specific tendencies add more depth to the description of this issue.

Well-defined evidence for Spontaneous Focusing on Numerosity (SFON) tendencies as a predictor of mathematical fluency in later years (Hannula-Sormunen, McMullen & Lehtinen, 2021, p. 23; Nanu et al., 2018, p. 23; Hannula-Sormunen et al., 2023, p. 12) clearly indicates that some children spontaneously orient themselves to the quantitative aspects of their surroundings with subsequent positive outcomes for their numeracy skills. It is pertinent to note that observed differences in cross-national distributions of SFON, despite advancements in arithmetic progress, establish that informal learning methods tend to be more significant than formal learning onset times. This appreciates the child's natural curiosity as a potent instrument of learning through educational practices that harness it instead of suppressing it.

Those related to physical development, cognitive development, language development, or social-emotional development, taken collectively, provide crucial insight into the complex and unique pathway of child development. Key milestones include the achievement of gross motor milestones, such as the onset of walking by 12 months of age, vocabulary development in the second year of life, or the development of perspective-taking by age four

(MacDonald & McIntyre, 2019, p. 34; Lohndorf et al., 2019, p. 74; Mallawaarachchi et al., 2022, p. 26). These observations point to a clearly recognized need for early intervention for delays in development. Cognitive milestones or the role of play become very pertinent for this discussion. There is rapid development of executive functioning in the preschool ages and its establishment as a critical prerequisite for readiness for school. Perhaps more organized, rule-based, or symbolic forms of play become recognized as a critical means or mechanism of development (Rosas et al., 2019, p. 16; Ramani, Daubert, & Scalise, 2019, p. 34). Additionally, both elements of music training or pretend play contribute to the development of inhibitory control or understanding of social concepts (Kosokabe et al., 23, p. 18; Humphrey & Olivier, 2014, p. 23). These observations support humanistic tenets: that it is not child's play that is important, since it is a natural means of child-led investigation, experimentation, or interpretation of the world around them that provides both anxiety relief or self-actualization by allowing the child a chance to run complex behaviors through a simulated or risk-free trials process (Tsai, 2013, p. 28). Furthermore, considerations related to professionalization (Martin et al., 2020, p. 34) or the advent of something like the prevention of the internalized body ideal (Schmitt, Frenser & Fischer, 2025, p. 19) become factors that add to the discussion, signifying a social accountability. Early training in musical play positively affects development of empathies (Kawase et al., 2018, p. 27), illustrating the effects of specially designed intervention on socialization. Taken collectively, the findings point to an important role of the ECEC setting that focuses on preserving the magic, agency, or emotional potency of childhood itself by allowing for children to feel noticed, heard, or engaged with in their development. These observations support humanistic tenets pointing to the importance of a developmentally appropriate context characterized by a maturational emphasis on play or meaning-making as more important than rapid advancement into more academic endeavors. At the same time, stability with regard to motivational and behavioral profiles is accompanied by malleability, pointing to the shaping role of early experience as well as the possibility of corrective growth. Again, the insistence throughout on the role of relations, including educational ones such as teacher-child interactions, parental relations, and play

interactions, suggests that development is a fundamentally interpersonal phenomenon.

Conclusions

Overall, the literature synthesized within this systematic review offers a consistent and convincing description of the importance of early childhood education as a critical phase of development that is influenced by the complex interplay of individual, social, and cultural factors. This literature varies from the stability of motivational style (Laitinen, Lepola & Vauras, 2017), preschool temperament (DiLalla, Marcus & Wright-Phillips, 2004), to the extremely rapid development of physical, cognitive, language, or social-emotional skills (MacDonald & McIntyre, 2019; Mallawaarachchi et al., 2022). These studies point to the strength and fragility of young children, suggesting that this critical phase of life is of importance precisely because it is a foundation for developing other stages of life.

However, the literature also reveals a note of warning. Trends of rapid schooling and heavy levels of sedentary academic demands (Akkari, 2021; Gallagher et al., 2013) could produce a gap between what institutions require of children and what actually develops in them, potentially causing alienation, conflict, or impaired psychological well-being. Parent attitudes that range from acceptance to defiance (Bubikova-Moan, 2017, p. 37) and the appearance of new societal concerns, including internalization of body ideals (Schmitt, Frenser & Fischer, 2025), indicate that preschool educational endeavors should not be seen in isolation from other family and cultural factors. Professionalization is clearly called for, but it should never lose sight of creativity-promoting levels of standardization that do not choke creativity of staff (Martin et al., 2020, p. 37).

Ultimately, this book review asserts again the same urgent truth: the best forms of early childhood education do not prompt children toward remote intellectual ends but celebrate instead the presence of childhood itself. Such a context is predicated on the presence of nurturance, play, understanding of diverse cultural practices, and support, in which children feel encouraged to investigate, make mistakes, dream, and learn. That these children, as Wood (2023) traces the history of respect for childhood through philosophical ideals

of childhood into more recent commitments to equity and agency, are encouraged by authors such as Dewey, Piaget, Vygotsky, and many more before us who recognized that teaching young children is not about filling empty buckets but about igniting their own passion for learning. To policy-makers, to educators, to parents, there is a message that is both clear and human: invest in the earliest years not only for what it is likely to return in economic gain but for the fact that this is the beginning of forming what it means to be completely engaged in the world in a joyful way. This is what allows children, as well as the world, to dream of a better future that is both more compassionate, more creative, and more just.

References

Ahmad, S., Peck, J., & Terry, D. (2025). Socioeconomic influences on developmental milestones in early childhood. *Early Child Development and Care*.

Akkari, A. (2021). Global trends in early childhood education: The risk of overschooling. *International Journal of Educational Development*.

Akash, R. (2025). Cognitive and developmental milestones in infancy and early childhood. *Pediatric Research*.

Alonso-García, M., et al. (2024). Developmental milestones from birth to six years: A comprehensive review. *Child Development Perspectives*, 22.

AlSamhori, J., Toubasi, A., Jaber, D., Ghanem, H., Thainat, B., AlSamhori, A., & Kalbouneh, H. (2025). Jordanian parental perception of screen time and its association with psychological distress: A cross-sectional design. *Pediatrics & Neonatology*, 66. https://doi.org/10.1016/j.pedneo.2023.11.010

Bubikova-Moan, J. (2017). Negotiating learning in early childhood: Narratives from migrant homes. *Linguistics and Education, 39, 26–37*. https://doi.org/10.1016/j.linged.2017.04.003

Crook, C., & Bligh, B. (2016). Technology and the dis-placing of learning in educational futures. *Learning, Culture and Social Interaction, 11, 5–14.*
https://doi.org/10.1016/j.lcsi.2016.09.001

Purpura, D. J., & Napoli, A. R. (2015). Early numeracy and literacy: Untangling the relation between specific components. *Mathematical Thinking and Learning, 17(2-3), 197–218*

DiLalla, L. F., Marcus, J. L., & Wright-Phillips, M. V. (2004). Longitudinal effects of preschool behavioral styles on early adolescent school performance. *Journal of School Psychology, 42(5), 385–401*. https://doi.org/10.1016/j.jsp.2004.05.002

.

Eaton, W. O. (2008). Milestones: Physical. In M. M. Haith & J. B. Benson (Eds.), *Encyclopedia of Infant and Early Childhood Development (pp. 103–112).* Academic Press. https://doi.org/10.1016/B978-012370877-9.00103-1

Erickson, S., Montague, E., Maclean, P., Bancroft, M., & Lowe, J. (2012). Differential ethnic associations between maternal flexibility and play sophistication in toddlers born very low birth weight. *Infant Behavior and Development*, 35. https://doi.org/10.1016/j.infbeh.2012.07.008

Ferreira, L., et al. (2022). Early detection of developmental delays: Recommendations and interventions. *Pediatrics*, 35.

Gallagher, K. C., et al. (2013). Gender differences in active play during preschool. *Early Childhood Research Quarterly*.

Gastaud, P., et al. (2023). Environmental factors in cognitive development. *Journal of Child Psychology*.

Hannula-Sormunen, M. M., McMullen, J., & Lehtinen, E. (2021). Supporting early numeracy: The role of spontaneous mathematical focusing tendencies in learning and instruction. In A. Fritz, P. Räsänen, & J. Haase (Eds.), *Heterogeneous contributions to numerical cognition: Learning and education implications (pp. 275–298).* Academic Press. https://doi.org/10.1016/B978-0-12-817414-2.00013-0

Hannula-Sormunen, M. M., Batchelor, S., Torbeyns, J., Simms, V., Nanu, C., Laakkonen, E., & De Smedt, B. (2023). Age group differences in SFON tendency and arithmetical skills of four to seven year olds in four countries with different school starting ages. *Cognitive Development, 66, Article 101296.* https://doi.org/10.1016/j.cogdev.2023.101296

Hu, Y., & Callander, E. (2024). Long-term effect of having a child at risk of developmental delays on parental labor force participation. *Maternal and Child Health Journal, 28(8), 1405– 1413.* https://doi.org/10.1007/s10995-024-03897-4

Humphrey, K., & Olivier, A. (2014). Investigating the impact of teenage mentors on pre-school children's development: A comparison using control groups. *Children and Youth Services Review*, 44. https://doi.org/10.1016/j.childyouth.2014.05.018

Kawase, S., Ogawa, J., Obata, S., & Hirano, T. (2018). An investigation into the relationship between onset age of musical lessons and levels of sociability in childhood. *Frontiers in Psychology, 9, Article 2244.* https://doi.org/10.3389/fpsyg.2018.02244

Kılıç, M., & Koçak, Ş. (2023). Examination of psycho-motor development of children who were 6–36 months in the COVID-19 stay-at-home period. *Scientific Reports*. https://doi.org/10.1038/s41598-023-47865-4

Kosokabe, T., Mizusaki, M., Nagaoka, W., Honda, M., Suzuki, N., & Moriguchi, Y. (2023). Self-directed music play to improve executive function in young children using NIRS. *Scientific Reports*. https://doi.org/10.1038/s41598-025-10984-1

Tao, K.-T., & Chiu, J.-H. (1985). The one-child-per-family policy: A psychological perspective. In W.-S. Tseng & D. Y. H. Wu (Eds.), *Chinese culture and mental health (pp. 153–165).* Academic Press. https://doi.org/10.1016/B978-0-12-701630-6.50018-6

Laitinen, S., Lepola, J., & Vauras, M. (2017). Early motivational orientation profiles and language comprehension skills: From preschool to Grade 3. *Learning and Individual Differences, 53, 69–78.* https://doi.org/10.1016/j.lindif.2016.11.002

Jasmine Lee, Harald Janson, Ane Nærde, Eirini Flouri. (2025). The impact of maternal lifetime stressor exposure on child effortful control in the preschool years: Findings from the Behavior Outlook Norwegian Developmental study, *Children and Youth Services Review, Volume 170,* https://doi.org/10.1016/j.childyouth.2025.108147.

Sarah Klein-Radukic, Norbert Zmyj .(2023). The predictive value of the cognitive scale of the Bayley Scales of Infant and Toddler

Development-III, Cognitive Development,Volume 65. https://doi.org/10.1016/j.cogdev.2022.101291.

Lifter, K., Mason, E., Minami, T., Cannarella, A., & Tennant, R. (2022). Emergent patterns in the development of young children's object play. *Acta Psychologica*, 224. https://doi.org/10.1016/j.actpsy.2022.103524

Lohndorf, R. T., Vermeer, H. J., Cárcamo, R. A., De la Harpe, C., & Mesman, J. (2019). Preschoolers' problem behavior, prosocial behavior, and language ability in a Latin-American context: The roles of child executive functions and socialization environments. *Early Childhood Research Quarterly, 48, 66–76.* https://doi.org/10.1016/j.ecresq.2019.02.005

MacDonald, M., & McIntyre, L. L. (2019). The relationship of age, early motor skills and observable child behaviors in young children with developmental delays. *Research in Developmental Disabilities, 93, Article 103445.* https://doi.org/10.1016/j.ridd.2019.103445

Malambo, C., Klepačová, A., Brodská, K., Clark, C., & Musálek, M. (2024). Relationship among some coordinative and dynamic strength capabilities and constructive and conceptual thinking among preschool-age children. *Frontiers in Psychology*, 15. https://doi.org/10.3389/fpsyg.2024.1349884

Mallawaarachchi, S. R., et al. (2022). Social-emotional milestones and effortful control. *Journal of Applied Developmental Psychology*, 45.

Martin, J., Nuttall, J., Henderson, L., & Wood, E. (2020). Educational leaders and the project of professionalisation in early childhood education in Australia. International Journal of Educational *Research, 101, Article 101559.* https://doi.org/10.1016/j.ijer.2020.101559

Mekonnen, E., Arega, M., Belay, D. M., Birhanu, D., Tesfaw, T., Ayele, H., & Bishaw, K. A. (2023). Time to death and its predictors among under-five children on antiretroviral treatment in public hospitals of Addis Ababa, Addis Ababa, Ethiopia, a retrospective follow up study. *PLOS ONE, 18(7),*

Article e0288475. https://doi.org/10.1371/journal.pone.0288475

Metaferia, B., Takacs, Z., & Futo, J. (2020). The Relationship Between Parental Play Beliefs, Preschoolers' Home Experience, and Executive Functions: An Exploratory Study in Ethiopia. *Frontiers in Psychology*, 11. https://doi.org/10.3389/fpsyg.2020.00624

Mohammed, S., Afaya, A., & Abukari, A. (2023). Reading, singing, and storytelling: the impact of caregiver-child interaction and child access to books and preschool on early childhood development in Ghana. *Scientific Reports*. https://doi.org/10.1038/s41598-023-38439-5

Nanu, C. E., et al. (2018). SFON as predictor of arithmetic fluency. *Journal of Experimental Child Psychology*, 39.

Prins, J., van der Wilt, F., van der Veen, C., & Hovinga, D. (2022). Nature play in early childhood education: A systematic review and meta ethnography of qualitative research. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.995164

Ramani, G., Daubert, E., & Scalise, N. (2019). Role of Play and Games in Building Children's Foundational Numerical Knowledge. *Cognitive Foundations for Improving Mathematical Learning*. https://doi.org/10.1016/B978-0-12- 815952-1.00003-7

Rosas, R., Espinoza, V., Porflitt, F., & Ceric, F. (2019). Executive Functions Can Be Improved in Preschoolers Through Systematic Playing in Educational Settings: Evidence From a Longitudinal Study. *Frontiers in Psychology*, 10. https://doi.org/10.3389/fpsyg.2019.02024

Satu Laitinen, Janne Lepola, Marja Vauras .(2017).Early motivational orientation profiles and language comprehension skills: From preschool to Grade 3, *Learning and Individual Differences,Volume 53,2017, Pages 69-78,*
https://doi.org/10.1016/j.lindif.2016.11.002

Scherr, C. L., Getachew-Smith, H. J., Sudec, L., Brooks, J. J., & Roberts, M. (2020). Parents' sensemaking processes in the identification of developmental delays and engagement with early intervention services. *Social Science & Medicine*, *255*, *112941*.

DOI: https://doi.org/10.1016/j.socscimed.2020.112941

Schmitt, A., Frenser, M., & Fischer, T. (2025). Tendencies of eating disordered behaviours in male content creators: a social media analysis. Journal of Eating Disorders, 13(1), 201. DOI: https://doi.org/10.1186/s40337-025-01395-8

Silva, H., Nascimento, T., Lima, T., & Costa, A. (2019). The effect of an initiation to struggles structured program on the physical capacities, visual attention and school performance in elementary school children. *Revista Brasileira de Ciências do Esporte*, 41. https://doi.org/10.1016/j.rbce.2018.04.012

Trawick-Smith, J., & Dziurgot, T. (2011). 'Good-fit' teacher–child play interactions and the subsequent autonomous play of preschool children. *Early Childhood Research Quarterly*, 26. https://doi.org/10.1016/j.ecresq.2010.04.005

Tsai, M. (2013). Research in play therapy: A 10-year review in Taiwan. *Children and Youth Services Review*, 35. https://doi.org/10.1016/j.childyouth.2012.10.016

Vita-Barrull, N., Estrada-Plana, V., March-Llanes, J., Guzmán, N., Fernández-Muñoz, C., Ayesa, R., & Moya-Higueras, J. (2023). Board game-based intervention to improve executive functions and academic skills in rural schools: A randomized controlled trial. *Trends in Neuroscience and Education*, 33. https://doi.org/10.1016/j.tine.2023.100216

Wood, E. (2023). Key developments in early childhood. In R. J. Tierney, F. Rizvi, & K. Ercikan (Eds.), *International Encyclopedia of Education (Fourth Edition) (pp. 20-47)*. Elsevier. https://doi.org/10.1016/B978-0-12-818630-5.14055-2

Zhao, T., Luan, J., Dan, F., Chang, X., & Cong, L. (2025). The effect of child-appropriate play with various types on preschoolers' executive function. *Acta Psychologica*, 262. https://doi.org/10.1016/j.actpsy.2025.106022

Zippert, E., Eason, S., Marshall, S., & Ramani, G. (2019). Preschool children's math exploration during play with peers. *Journal of Applied Developmental Psychology*, 65. https://doi.org/10.1016/j.appdev.2019.101072