



Ghana Education
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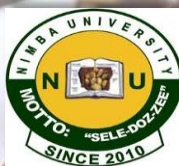


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UNDERSTANDING HOW COMMUNITY ENGAGEMENT, PLAY-BASED LEARNING AND HOME-BASED EARLY LEARNING INITIATIVES AFFECT EARLY CHILDHOOD EDUCATION AND DEVELOPMENT: A LITERATURE REVIEW



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Abstract

Introduction: Several decades of research provides the prospects of early childhood education and interventions for young children such as the acquisition of important academic (numeracy and literacy), social, cultural skills as well as proves of positive health implications. Irrespective of these potential benefits to a child, access and quality remains problematic in developing countries especially sub-Saharan African countries. Ghana is not an exception to this problem at the ECE level, although kindergarten education has been integrated into the formal system unlike other countries in the sub-region. Most rural and marginalised communities encounter numerous challenges including lack of ECE-dedicated classrooms, absence of trained ECE teachers or facilitators and/or poor quality. Consequently, there is the need for interventions that incorporates a hybrid (centre- and home-based) approach where parents and trained ECE teachers collaborate to deliver local-based early childhood pedagogy to understand the impact of development of younger children.

Purpose: To examine the impact of a novel hybrid early childhood education model, scaling inclusive home-based early learning initiative (SIHELI), a review existing literature on home- and centre -based early childhood education interventions were conducted. Specifically, it seeks to identify the (i) extent of stakeholder participation in early childhood education; (ii) the impact of play-based (especially indigenous play and games) learning on early childhood development; and (iii) the impact of home-based early learning interventions on early childhood development.

Methods: The review was conducted using a traditional literature review approach. Searches were conducted in Scopus, Google and other relevant sources on early childhood education to understand the impact of and development. After the studies were extracted, checked for eligibility and included in the review, a thematic analysis was conducted.

Findings: The findings revealed that stakeholder participation and inclusion in early childhood education is characterised by active involvement, shared responsibilities and empowerment. The active involvement of community members including parents and community leaders provides crucial opportunities for accessing resources and labour, which helps to address infrastructure, personnel, nutrition and nutrition gaps particularly in resource-limited settings. Secondly, the evidence highlights that incorporating an indigenous orientation to early childhood education and play-based learning could significantly enhance academic, physical, cognitive, social, and emotional growth and development of children. While providing the prospects of cultural heritage preservation and continuity since children can connect with their culture, cultural identity and community practices. Additionally, existing studies substantiates that children enrolled in either or both types of ECCE care predominantly experience holistic and growth and outcomes including literacy, numeracy, social, emotional, psychological and cultural improvements. However, practitioners were shown to often lack the necessary skills and resources to effectively integrate play pedagogies into their teaching, implying the need for educators and facilitators to receive adequate training in the implementation of traditionally informed play-based pedagogies for community-driven ECCE education.

Conclusion: To address challenges faced in resource-constrained settings, collective and collaborative efforts among caregivers, parents, and educators, are required to foster all-inclusive growth and development of younger children thereby improving inclusivity and effective in educational outcomes. Adopting local material and traditional stories, games and play activities makes learning not only enjoyable but leads to superior (non)educational outcomes for children. Further evidence substantiates the numerous benefits associated with early childhood education interventions that collaborates centre- and home-based approaches. Regardless, pertinent challenges persist at the early childhood



level in terms of how best to combine indigenous approaches with established ECE curriculum and structures.

Policy implications: This evidence underscore the growing recognition that early childhood education could be effectively delivered through communal responsibility with support from trained early childhood education experts. Also, policymakers in the education sector including the Ministry of Education and the Ghana Education Service should promote access to high-quality community/centre-based early childhood education programmes, especially for children from disadvantaged backgrounds, to enhance their developmental outcomes. In doing so, it is important to leverage local resources in redesigning early childhood education that resonates with children’s cultural backgrounds. Most importantly, there is the need for early childhood education initiatives to adopt strategies that leverages both the gains associated with centre- and home-based early childhood education approaches. Training needs to be provided to ECE trained teachers and parents to effectively incorporate indigenous strategies in the teaching and learning processes.



1.0 Introduction

Globally, Early Childhood Care and Education (ECCE) is regarded as a critical foundation for the holistic development of children and a key driver of societal progress. It is during these formative years, from birth to five years, that children develop essential cognitive, emotional, social, and physical competencies that shape their lifelong learning and development trajectories. These early experiences significantly influence brain development, school readiness, and even economic productivity in adulthood (Heckman, 2006; Trawick-Smith, 2014). In Ghana, ECCE is an integral part of the educational system, designed to foster the growth and development of children in their early years. Policies such as the introduction of kindergarten as part of the Free Compulsory Universal Basic Education (FCUBE) programme have emphasized the government's commitment to expanding access to early childhood education. Despite these strides, many Ghanaian children face challenges in accessing quality ECCE services. Factors such as urban-rural disparities, inadequate infrastructure, lack of trained educators, and limited funding impede the equitable distribution of ECCE services (UNICEF, 2021). These challenges disproportionately affect children in low-income households and marginalized communities, widening existing inequalities.

Yet, research underscores the transformative potential of quality ECCE in addressing such disparities. High-quality ECCE programmes have been shown to improve school readiness, enhance socio-emotional development, and mitigate the negative impacts of poverty on learning outcomes (Bakken, Brown, & Downing, 2017). These benefits are particularly pronounced for children from disadvantaged backgrounds, as early exposure to stimulating and nurturing environments can offset developmental delays and prepare them for success in primary education and beyond (Sluiter et al., 2023). Inclusive Early Childhood Education (IECE) builds on these principles by ensuring that all children, regardless of ability, socioeconomic status, or background, have access to equitable and quality education. This approach goes beyond physical access to include active participation in learning environments tailored to meet the diverse needs of learners. In Ghana, scaling IECE has gained prominence as a strategy to bridge gaps in educational access and outcomes. Initiatives like the Global Partnership for Education (GPE) and UNICEF-supported programme have focused on training teachers, developing culturally relevant curricula, and providing inclusive learning materials to create environments conducive to learning for all children (Ereky-Stevens, Siraj, & Kong, 2021).

The concept of inclusivity in ECCE extends to fostering a sense of belonging for all children. This involves addressing systemic barriers such as stigma, inaccessible facilities, and inadequate teacher training. Strategies for achieving inclusive ECCE include implementing culturally sensitive curricula, engaging local communities, and building the capacity of educators. A culturally relevant curriculum, for instance, resonates with the lived experiences of learners and fosters engagement, while community involvement ensures sustainability by empowering families and local stakeholders to take ownership of educational initiatives (Barnett et al., 2021; Parker, Thomsen, & Berry, 2021).

1.2 Overview of Ghana's early childhood education sector

Ghana's prioritisation of early childhood education makes the country well placed to carry out this project. The field of early childhood education (ECE) in Ghana has transitioned from a traditional approach to a more structured and contemporary method of providing care and educational services for young children. ECE, as a highly regarded practice, embodies a policy that is either distributive, regulatory, or redistributive (Ackah-Jnr et al., 2022; Lemaire et al., 2013).

Ghana's Early Childhood Education (ECE) system has changed dramatically over the years, transitioning from a mostly family-based obligation to a more organized and government-supported system. Initially, ECE was not regarded as a formal component of the educational system, with



parental care serving as the major way of early learning. This traditional method, strongly ingrained in Ghanaian society, stressed social interaction and valued knowledge, skills, and attitudes. However, the government's awareness of the vital significance of ECE in child development resulted in its incorporation into the official school system (Ackah-Jnr et al., 2022). Prior to the 2007 Educational Reforms, ECE was mostly supplied by private individuals, such as churches, mosques, and community groups. This uncontrolled method led to uneven quality standards and restricted availability, especially in rural regions. The government's action aimed to solve these issues by developing standards and encouraging the establishment of ECE facilities with the help of District Assemblies, NGOs, and communities (Ackah-Jnr et al., 2022; Lemaire et al., 2013).

The introduction of a mandatory ECE component in 2003 was a watershed moment in Ghana's education system. ECE programmes currently emphasize the development of children's cognitive, social, emotional, and physical abilities via interactive activities, storytelling, and hands-on learning. The focus on cooperative learning and social skills creates a pleasant and supportive atmosphere for young children (Ghana Education Service (GES), 2022). ECE education in Ghana also depends on the critical factor of enrolling children in kindergarten at the right age of four and five years old. During this infancy, infants should primarily be exposed to early stimulating experiences and nurturing care. Furthermore, students should be taught key abilities like arithmetic, literacy, and problem-solving via play and games. This provides a solid foundation for lifelong learning, encouraging students to become responsible and accountable citizens in the future (Ghana Education Service (GES), 2022).

Ghana acknowledges the pivotal role of robust Early Childhood Education (ECE) policies in its Education Strategic Plan 2018 to 2030 which is focused on fostering holistic development and nurturing its child population. Thus, Ghana's Ministry of Education initiated the ECCD policy in 2004 to delineate guidelines for nurturing and educating children from birth to 8 years. Central government is the key stakeholder responsible for formulating and implementing or leveraging the ECE policy (Ackah-Jnr, 2021). The policy embodies the interconnectedness of care and education, recognizing the symbiotic relationship between development and learning. The policy also places a key role and protagonist as the community in the delivery and support to ECE across Ghana. The ministry and Ghana education service have been developing policy guidelines for community engagement. A principal objective of this policy is to foster partnerships between government, community stakeholders, and parents to create an enabling environment for effective ECE service delivery (Government of Ghana [ECCD Policy], 2004). The Ghanaian government, specifically the Ministry of Education (MoE) and the Ghana Education Service (GES), has created favourable conditions by developing the ECE Policy Framework. This framework includes various documents that provide guidance for implementing the ECE Policy, such as Policy Directives, a Costed Implementation Plan/Monitoring and Evaluation Framework, and ECE Policy Guidelines. These efforts are aimed at enhancing the Education

Act of 2008, which upholds the constitutional obligation to provide free and comprehensive education. The National Education Strategic Plan of Ghana for the year 2018-2030 is in accordance with SDG 4.2.4, which aims to ensure that by 2030, every girl and boy has equal access to high-quality early childhood development, care, and pre-primary education to adequately prepare them for primary school. The most effective investment that Ghana or any country can make in promoting their own resource development is to prioritize and focus on its kindergarten children (Lemaire et al., 2013). Ghana's Early Childhood Education (ECE) policy aims to improve the survival, growth, development, and safety of young children. This shifts the responsibility of early childhood education (ECE) to the government, ensuring that parents continue to perform their traditional responsibilities of caring for and nurturing their children. The Ghanaian government's primary responsibility is to develop



programmes that focus on Early Childhood Education (ECE) and create a welcoming environment for parents, caregivers, and children, as well as ECE services and sectors, to efficiently provide the necessary care and education. The government intends to empower parents and meet the needs of children by providing employment and developing development projects such as education, health, recreational facilities, learning centres, and other necessities. These opportunities are particularly designed for parents to exploit, occupy useful roles, and make significant contributions to their children's education. Ghana's Ministry of Education has committed to ensure that every child in the nation has access to high-quality early childhood education (ECE) by 2030, as specified in the Education Strategic Plan (ESP) for 2018-2030. The ministry also stresses the use of a play-based approach to improve children's learning and development (Ackah-Jnr et al., 2022).

While progress has been achieved, issues like insufficient infrastructure, teacher training, and resource allocation remain to provide equal access to excellent ECE throughout the nation (Ackah-Jnr et al., 2022). These challenges underpin the need to alternative pathways to ensuring that children at the early childhood stages especially in marginalised areas have access to quality education to reduce the out of school situations such areas, ultimately contributing towards improving the literacy, numeracy and subsequently the future wellbeing and prospects. The reforms implemented over the years have led to substantial improvements in access to ECE in Ghana (Wolf & Peele, 2020). The government's commitment to ECE was further demonstrated by increased budget allocations to the early education sector. For instance, the budget for early education rose from approximately 435 million GHS in 2012 to over 501 million GHS in 2014, maintaining its share of around 7.6% of the total education budget (Bago et al., 2019). In 2018, Ghana integrated two years of kindergarten into its Free and Compulsory Universal Basic Education (FCUBE) system, further solidifying its commitment to universal access to early education (Bago et al., 2020). Additionally, the introduction of a play-based kindergarten curriculum in 2019 under the new primary curriculum, called the Curriculum for Change and Sustainable Development, was a significant development aimed at providing a more holistic and engaging learning experience for young children (Quartey & Casely-Hayford, 2023).

The impact of these reforms is evident in the significant increase in pre-primary school attendance rates. Data from the World Bank (2024) shows a remarkable rise in the pre-primary gross enrolment ratio from 60% in 2000 to 116% in 2020. This substantial increase positions Ghana as a leader in pre-primary education access within Sub-Saharan Africa, with Ghana outpacing many other African countries such as Kenya and Senegal, whose GERs remain below 60% (World Bank, 2024). Despite the impressive gains in enrolment, the quality of early childhood education in Ghana remains a concern. The primary goal of ECE is to enhance children's readiness for primary education (Kyei et al., 2018). However, according to a UNICEF report on ECE quality, only about 40% of preschoolers in Ghana are on track in literacy and numeracy skills, which are critical indicators of school readiness (Wolf & Peele, 2020). This indicates that a significant proportion of children attending ECE programmes are not acquiring the necessary skills to succeed in their subsequent education.

1.1.2 Importance of Inclusive Early Learning Pedagogy and Smooth Transition from ECCE to Primary School

Inclusive early learning pedagogy plays a fundamental role in addressing the diverse developmental needs of children, particularly in settings characterized by socioeconomic, cultural, and linguistic diversity. By prioritizing child-centred approaches, inclusive pedagogy ensures that each child's unique strengths, needs, and preferences are recognized and accommodated. This approach enhances children's cognitive, linguistic, and socio-emotional development, equipping them with essential tools for lifelong learning. Studies have consistently demonstrated that inclusive early education settings



provide children with the foundational skills necessary for success in later educational stages and life in general (Magnuson, Ruhm, & Waldfogel, 2007; Yoshikawa et al., 2013).

The transition from early childhood education and care (ECCE) to primary school represents a crucial phase in a child's educational journey. During this period, children must adapt to new learning environments, teaching styles, and social dynamics. A smooth transition is essential to sustain the developmental gains achieved during ECCE. Research indicates that when this transition is well-supported, children are more likely to maintain their academic progress, develop positive attitudes toward learning, and experience fewer emotional or social challenges. In Ghana, however, this transition is often hindered by misalignments between ECCE frameworks and primary school curricula, resulting in difficulties for children adapting to formal schooling environments. These challenges can adversely affect their confidence, academic performance, and overall enthusiasm for learning (Ramey & Ramey, 2004). To mitigate these challenges, several strategies have been identified as effective. One key approach is aligning ECCE and primary school curricula to ensure continuity in learning content and teaching methodologies (Shuey et al., 2019). This alignment involves integrating foundational literacy, numeracy, and socio-emotional skills into ECCE programmes, which prepares children for the more structured learning environment of primary school. Child-centred teaching methods that build on children's prior knowledge and experiences are particularly effective in easing the transition. These methods not only make learning more engaging for children but also help them feel a sense of familiarity and confidence in their new educational setting. Parental involvement is another critical factor in supporting a smooth transition from ECCE to primary school. Parents and caregivers provide both emotional and practical support, which helps children navigate new learning environments with greater ease. Encouraging parents to participate in school activities, attend transition workshops, and engage in their children's learning process strengthens the bridge between home and school. This partnership between parents and educators fosters a consistent and supportive environment for children, reducing the anxiety often associated with significant educational transitions (Rusby et al., 2017).

Bridging programmes have also been proposed as effective interventions for ensuring continuity between ECCE and primary school. These programmes are designed to familiarize children with primary school routines, expectations, and environments while reinforcing the skills they have acquired in ECCE settings. For instance, short-term orientation sessions or summer programmes can introduce children to primary school teachers, classroom settings, and daily routines. These initiatives not only help children adjust to the new environment but also allow educators to assess their readiness and address any learning gaps before the formal school year begins. Teacher training is a critical component in supporting children during the transition from ECCE to primary school. Educators must be equipped with the skills and knowledge required to create inclusive and nurturing classroom environments. Professional development programme focus on transition management, inclusive pedagogy, and early childhood development can enhance teachers' capacity to support children effectively. When teachers are trained to recognize and respond to the diverse needs of their students, they can implement strategies that foster a sense of belonging and inclusion, thereby promoting positive learning outcomes. The importance of inclusive early learning pedagogy and smooth transitions from ECCE to primary school cannot be overstated. By addressing the developmental needs of children and creating supportive environments, inclusive practices lay the foundation for lifelong learning and success. In contexts like Ghana, where disparities and misalignments in educational frameworks exist, adopting these strategies can significantly enhance the quality and inclusivity of education. A concerted effort involving policymakers, educators, parents, and communities is essential to ensure that every child experiences a seamless and enriching transition from early childhood to primary education.



1.1.3 Rationale for Home-Based Early Learning Play Approaches in Promoting School Readiness

Home-based early learning play approaches provide a cost-effective and scalable means of addressing the challenges associated with limited access to early childhood education and care (ECCE), particularly in underserved and resource-constrained communities. By leveraging the home environment as a platform for interactive and play-centred learning, these approaches ensure that children can engage in meaningful educational activities despite the absence of formal ECCE facilities. Activities such as storytelling, shared reading, and structured play are central to this model, enabling children to develop critical cognitive, social, and emotional skills. These skills, including language development, problem-solving, and socio-emotional competencies, are foundational for school readiness and later academic success (Cabell et al., 2019). In rural Ghana, where formal ECCE centres are often inaccessible due to geographical or financial constraints, home-based learning serves as a viable alternative. This model empowers caregivers, particularly parents, to take an active role in their children's education. By minimizing the costs associated with transportation and infrastructure, home-based approaches make early learning more accessible while fostering a sense of ownership and responsibility among families. This empowerment is particularly significant in resource-limited settings, where external support may be inconsistent or entirely absent. However, the success of home-based early learning depends on several key factors, including caregiver training, access to age-appropriate learning materials, and robust community support (Hartinger et al., 2017). Caregiver training programmes are integral to the effectiveness of home-based learning. These programmes equip caregivers with knowledge of child development principles, effective teaching strategies, and ways to create stimulating learning environments. Through such training, caregivers gain the skills needed to provide consistent, high-quality educational experiences for their children. For example, training might include guidance on facilitating play-based learning activities, fostering curiosity through open-ended questions, and encouraging language development through storytelling and conversation. When caregivers are well-prepared, children are more likely to engage in activities that nurture their cognitive and emotional growth, ultimately enhancing their readiness for formal schooling. Another crucial element of successful home-based learning is access to age-appropriate and culturally relevant learning materials. Books, puzzles, play kits, and other resources enable children to explore and learn through hands-on experiences.

In resource-constrained communities, local or government-supported initiatives can play a significant role in ensuring the availability of these materials. For example, community libraries or mobile resource centres could distribute learning kits, providing families with tools to enrich home-based learning environments. Such initiatives also help to address disparities in access to educational resources, ensuring that all children, regardless of their socioeconomic background, have opportunities to engage in meaningful early learning experiences. The role of social and emotional support within home-based learning models cannot be overlooked. Children who grow up in nurturing and supportive environments exhibit better resilience, adaptability, and socio-emotional skills, all of which are critical for success in school and beyond. This aspect is particularly important for children who have experienced adversity or trauma, as the home environment often serves as their primary source of stability and comfort. Integrating social and emotional development into home-based programme involves encouraging caregivers to engage in warm and responsive interactions, foster secure attachments, and provide a safe space for exploration and learning (Tonyan et al., 2017; Cadima et al., 2021). Home-based early learning approaches can achieve even greater impact when integrated into broader ECCE frameworks. For instance, community-based initiatives that offer resources and support to caregivers can enhance the effectiveness of home-based models. These initiatives might include workshops for parents, support groups for caregivers, or partnerships with



local organizations to provide materials and training. Collaboration between caregivers, educators, and local stakeholders is essential for creating a cohesive and supportive learning ecosystem. By working together, communities can ensure that home-based learning complements formal ECCE efforts, providing children with a seamless transition into structured education systems. Overall, home-based early learning play approaches offer a practical and impactful solution to addressing ECCE challenges in underserved areas. By emphasizing caregiver involvement, access to resources, and integration with community initiatives, these models create opportunities for children to thrive in their early years. As such, they represent a vital component of equitable and inclusive early childhood education, particularly in rural and resource-constrained settings

2.0 Theoretical Perspectives: social constructions and socioecology

The social constructivist and the socioecological theoretical frameworks underscore this review. These theories are considered in this review because of their prominence in early childhood education research and practice and play-based learning and pedagogy.

2.1 Social Constructionism

Scholars (*such as* Beloluts kaya et al., 2022; Hedges, 2000; Ogunyemi and Ragpot, 2015) have stressed the importance of understanding how children actively construct or co-create knowledge and experiences with their teachers and other stakeholders during the teaching and learning processes. Following Piaget (1976) theoretical position that how knowledge is developed resides in the interactions that occur between the object and the subject, the active involvement and engagement of children in the learning activities is considered significant for the construction of knowledge (Main et al., 2016).

Sociologically, the social construction theorists posit that human beings (*here in* children, teachers and their parents) are capable of thinking and putting up an action. They therefore see humans as rational thinking agents who are able to understand their sociocultural environment and consequently initiate social actions informed by their interpretations of their surroundings. Hence, the theory's central claim is that human behaviour shapes reality in a social way. According to McMahon (1997), knowledge is a product of interactions between individuals and their surroundings and is culturally specific. Therefore, the idea highlights how crucial culture and context are to comprehending social events and building knowledge from them. Both the social context in which learning takes place and the social context that students bring to the classroom are important, according to social constructivists (Krieg, 2018). Therefore, from the perspective of social constructivists, it is crucial to take into account the learner's history and culture at every stage of the learning process since these factors influence the information and truth that the learner generates, uncovers, and achieves. This position is supported by the argument that the instructor should lead, assist, and guide the student in a teaching and learning environment rather than “spoon feed” them (Krieg, 2018).

In line with the above, social construction theorists reject the one-sided approach to knowledge transmission and acquisition. That is, the notion held by others that a teacher may only impart knowledge or information to pupils and hope they would understand. Effective learning could not result from just giving students notes or knowledge. The claim that students need to be actively involved in assignments or given problem-solving guidance to truly comprehend and apply knowledge stems from the fact that learning is much more than committal to memory. Students may create information and meaning in their own minds and discover things on their own by working on tasks. According to Owusu-Mensah and Baffour (2015), the teacher's role in the teaching and learning



process is to guide the learner to find and create their own meaning within their social environment (Krieg, 2018). The child is shown as an engaged social participant who is a part of the social milieu rather than as existing outside of it. The social is valued over the individual in this situation and being aware means holding a certain place at a certain moment in a continuing connection. Critical constructionists contend that our culture and the power dynamics ingrained in it are inextricably linked to the process of creating meaning. A critical viewpoint looks at the power dynamics in society and how youngsters are positioned by the cultural scripts being performed in dramas: some have more power than others. By adopting a critical social constructionist worldview, the social conditions of the child are no longer viewed as the “background”, but rather as the foundation for learning (Krieg, 2018).

There are several helpful ways to view the learning that takes place as children act out their understanding of location from a critical social constructionist standpoint. First, the child is viewed as an active participant in the world from birth, acting as “actors in a drama”. The child is playing a part and giving the world meaning, not preparing to play a part. Every child’s experience is influenced by a social script in a variety of ways, including through cultural tools (including language), symbols, conventions, cooking, and shared spatial usage. It is crucial that the adults dealing with the child view their roles—as well as those of other children—as co-constructing from a critical social constructionist standpoint (Krieg, 2018). The gap between “teacher led” and “child centred” perspectives on teaching and learning in the early years is lessened when teaching and learning are seen as a co-construction of meaning. The adult is no longer seen as only “responding” to the early learner’s needs or interests; rather, they are in a reciprocal relationship where they also contribute ideas and methods of knowing and encourage other children to join in the discussion. The process of two individuals interacting, listening to one other’s ideas, contributing their own, and working together to create a unique shared meaning is known as co-construction (Jordan 2012; Brinn, 2016). Every participant connects experiences across time and space, and the child’s voice is respected and heard. As a result, co-construction repositions the instructor and the early learner. Alongside the child or youngsters, the instructor is also learning. This participation is crucial to children’s construction of knowledge. The child’s knowledge and understanding can be understood from a “*Funds of Knowledge* (FoK)” perspective (Moll et al., 1992), foregrounding the social origins of knowledge as a result of participation in particular cultural and social circumstances (Bowden and Marton, 2003). Here, the cognitive constructivist viewpoint—which is focused on how each child constructed meaning—gives way to a critical social constructionist paradigm, which is concerned with how a couple or group understands a phenomenon, experience, or idea (Krieg, 2018).

The constructionists approach to early childhood education emphasizes both teacher-initiated and student-initiated learning experiences. These theoretical ideas reconceptualise teaching in early childhood education by suggesting that early childhood teachers should take the initiative to provide a stimulating learning environment for young children and have the pedagogical knowledge and skills necessary to teach while the children are playing (Hedges, 2000). This makes the theory suitable for the SIHEL project since there is a focus on children as peer teachers within the early childhood space, supported by trained and parents as their facilitators at this educational level to develop key skills.



2.2 Socioecological theory

Although the social constructionist argue that the child plays a crucial role in shaping what they are taught and learn, there is a failure to acknowledge that complex interplay of settings that younger children are exposed to, from which their learning activities are shaped. In other words, there exists numerous environments with inherent conditions that affects the learning abilities and outcomes of the child. Within the context of the SIHELI project, the socioecological theory is relevant since the family, the school and the broader social and cultural contexts shape the learning activities at the early childhood level, especially in non-Western societies such as Ghana (Edwards and Liu, 2002). According to Bronfenbrenner, who is a major theorist in this sociocultural and sociological tradition, the learning activities at the early childhood level could be affected by four interrelated systems—the microsystem, mesosystem, exosystem, and macrosystem— incorporated into a chronosystem that depicts the period in which a child grows up. The connections, roles, and interactions that take place at playgrounds, childcare facilities, and homes make up the microsystem. The interplay among different microsystems is the mesosystem. The mesosystem is the interaction between various microsystems (Bronfenbrenner, 1979, 1986, 2005). The exosystem is made up of external settings that have an indirect impact on the children (in which the child does not actively participate), such as the workplaces of the parents, the school where the sibling attends, or the local government. Finally, the macrosystem includes more general society traits including political institutions, conventions, practices, and beliefs (Bronfenbrenner, 1979, 1986, 2005).

Socioecological models recognize that early learning is influenced by factors at these multiple levels, starting from the intrapersonal (such as age, characteristics) to broader environmental settings (e.g. preschool, home) and societal levels (such as socioeconomic neighbourhood). The models acknowledge that each environmental setting contains multiple types of environments (e.g. social, physical) that interact with each other (Määttä et al., 2016). Biological and environmental or contextual elements, including as parental, communal, social, economic, political, and legal influences, as well as the services and institutions that surround them, interact to determine the best possible development and well-being for children and adolescents. This theoretical framework highlights how social and cultural factors impact children's education, learning, and development (Zhou, 2024).

Besides, the theory highlights dialogue and engagement as effective ways to learn and think. The foundation of this method of teaching early childhood education is the creation of language-rich environments where children's actively engage in group activities, storytelling, and dialogues that promote verbal expression and cognitive development (Zhou, 2024). Since most young children spend most of their time in two environments—the home and the preschool—people from these settings and their surroundings are important in understanding how to support parents and trained early childhood educators as early learning facilitators, especially in rural areas with a dense cultural population. Given the early developmental stage of preschool-aged children, it may be hypothesised that parents and preschool teachers have a significant role in early childhood. Therefore, studies that incorporate the roles and viewpoints of both parents and staff may offer fresh insights (Määttä et al., 2016).

This model is important for several reasons. Bronfenbrenner's model serves as a useful tool for exploring, categorizing, and interpreting different facets of children's environments and experiences. It identifies a plethora of micro- and macro-level characteristics and encourages us to consider factors that impact a child's life outside their insular family unit (Lopez et al., 2021). Also, there is the recognition that human development is tightly linked to sociocultural settings. The child is seen as an active participant in a social and cultural context where the materials, people, and practices all have a big impact on the child's development, according to this approach. Children learn on their own, thus.



Instead than merely taking in the environment, they use it to find meaning and understanding in their connections with it (Zhou, 2024). As well, this perspective suggests a collaborative approach to providing education to younger children, emphasising the relationships between families and schools as well as educators and students. To narrow the gap in income, it also promotes community engagement and emphasizes the value of teacher professional development. Moreover, family involvement is essential, considering the various family influences and learning styles. Through the promotion of inclusive methods that accommodate a range of needs, and learning styles, the socioecological theory helps ECE settings enhance sociability, creativity, and problem-solving skills (Zhou, 2024).

3.0 Methodology

According to Gough et al. (2012), the literature review process includes the art and science of gathering, analysing and synthesising diverse types of knowledge, providing an opportunity to learn from what others have research. Informed by this assertion, the review involved three (3) phases of activities: (i) search and identifying relevant studies; (ii) appraising and analysing the studies critically; and (iii) bringing together the different knowledge. The review was initiated by developing the guiding research questions, which included:

1. What is the extent community/stakeholders involvement or participation in early childhood education?
2. How does play-based learning impact the early childhood education and outcomes of younger children?
3. How does home-based early learning initiative affect the developmental outcomes of younger children?

Search strategy

Following the research questions, literature search was conducted from September to November 2024. Searchers were done in Scopus and Google, because they cover a broad range of studies and reports in the field of education, especially early childhood education. The search was done with a combination of key terms related to relevant concepts: community/stakeholder participation, early childhood education, home-based early learning, play-based learning, indigenous play. Boolean operators including OR, AND, along with quotation marks (“”), asterisks (*) and brackets, were used to combine these concepts. Ancestral and purposive searches were further conducted through eligible studies identified.

Eligibility criteria

Inclusion and exclusion criteria were used to assess the eligibility of studies retrieved for review. Studies were included if they focused on early childhood education, and home-based early learning and outcomes for children. Home-based in this context is operationalised to include both home- and centre-based (i.e., familial and non-familial childcare arrangements offered in the provider’s home) early learning among children. This is important since the SIHELI model is underpinned by a blend of the home-based and centre-based approaches to early childhood education (Ejuu et al., 2023). All quantitative, qualitative and/or mixed methods peer-reviewed articles and reports published in English language from 2006 to 2024 were included review. Grey literature, conference presentation and other literature sources published in other languages other than English, and prior to 2006 that is not focused



on early childhood education, community/stakeholder participation and/or home-based early learning were excluded from the review.

Analytical approach

Narrative approach was used to synthesise the findings of studies included in the review. This was supported with a thematic analytical procedure which involved identifying and analysing the main themes and patterns inherent in the findings from the included studies. Accordingly, an iterative process was employed to develop relevant themes that reflects the findings. While differences, similarities, and patterns in the findings were recognised and organised into meaningful categories. For instance, findings on the impact of home-based early learning on early childhood education and outcomes of younger children were appropriately categorised into themes: *‘socioemotional and behavioural outcomes’*, *‘cognitive developmental outcomes’*, *‘academic outcomes’*, and *‘health and motor developmental outcomes’*.

4. Findings

Findings from the review presented in this section show (i) community/stakeholder involvement or participants in early childhood education; (ii) play-based pedagogy/learning in early childhood education and care; and (iii) home-based early learning initiative and developmental outcomes of children.

4.1 Community/stakeholder involvement or participation in early childhood education and care

Inclusive home-based early learning relies heavily on the collective involvement of parents, teachers, and community members, who each play distinct yet interconnected roles in promoting a supportive environment for young learners. This environment nurtures children’s cognitive, social, and emotional development, ultimately facilitating a smoother transition into formal schooling. These stakeholders bring unique perspectives and resources that contribute to the holistic nature of inclusive early childhood education, especially in marginalised communities where resources may be scarce and formal education settings limited (Barnett et al., 2020; Ejuu et al., 2022; Kiende & Orodho, 2019).

Parents as primary educators

In home-based learning models, parents often become the primary educators and play a fundamental role in initiating their children’s first experiences with structured learning. Parental involvement in early education has been shown to have a significant impact on a child’s school readiness, language acquisition, and socio-emotional skills (Barnett et al., 2020). Parents naturally provide daily learning opportunities through conversations, storytelling, and play, which help develop essential pre-literacy and numeracy skills. Studies indicate that these interactions build vocabulary, nurtures curiosity, and enhance problem-solving skills, laying a strong foundation for formal education (Barger et al., 2019; Barnett et al., 2020). Parental involvement is particularly influential in low-resource settings, where access to formal education may be limited, and early educational interventions are essential for bridging developmental gaps (Ejuu et al., 2022; Khan et al., 2023). Home-based learning approaches are particularly effective in such contexts, as parents can draw from cultural practices and traditional forms of knowledge to enhance the learning experience (Barnett et al., 2020). For instance, storytelling or communal singing may integrate cultural values while simultaneously teaching language, rhythm, and social skills. By embedding learning within cultural and familial contexts, parents enable children to see education as an integral and natural part of life, rather than a formal or isolated activity, which research shows can enhance long-term engagement in learning (Barger et al., 2019).



Teachers as facilitators and guides

Teachers in inclusive home-based learning settings often serve as facilitators, guiding both children and parents in using developmentally appropriate, inclusive practices (Mhizha et al., 2022; Munthali et al., 2014). In many cases, these educators are trained in pedagogical approaches that emphasize play and experiential learning, which have been found to be particularly effective in enhancing early cognitive and social skills (Ejuu et al., 2022; Schaughency et al., 2019). Teachers bring specialized knowledge on early childhood development and are instrumental in helping parents understand and adopt techniques that support structured yet flexible learning environments at home.

Research highlights the importance of teacher support in enhancing parents' capacity to engage with and manage learning activities. For example, structured play activities introduced by teachers can support cognitive development while also promoting critical thinking and creativity, skills foundational to later academic achievement (Schaughency et al., 2019). Moreover, teachers often assist in adapting activities to accommodate children with varying learning needs, helping parents integrate inclusive practices that ensure no child is left behind (Baker et al., 2016). This guidance is particularly beneficial in communities where parents may have limited education themselves, as teachers bridge knowledge gaps by demonstrating effective methods and simplifying complex pedagogical concepts. Teachers also play an essential role in monitoring children's progress and identifying any areas of developmental concern (Tafirenyika et al., 2023). Regular home visits and parent-teacher meetings provide teachers with insights into each child's unique needs and family dynamics, enabling them to tailor recommendations and resources accordingly (Baker et al., 2016). These ongoing interactions build a collaborative relationship, encouraging trust and mutual respect between teachers and parents (Baker et al., 2016; Barger et al., 2019). When parents view teachers as allies and sources of knowledge, they are more likely to remain engaged in their child's learning journey and to implement recommended practices consistently (Baker et al., 2016).

Community members as support systems

Community engagement in home-based early childhood education centres significantly enhances the quality and inclusivity of early learning environments, particularly in resource-limited settings. Studies in Kenya and Zimbabwe, where home-based early childhood education has been implemented, highlight the critical role of community engagement in promoting the quality and inclusivity of early learning environments, particularly in resource-limited settings. Across these settings, community members actively contribute time, resources, and labour to support these centres, addressing gaps in infrastructure, nutrition, and personnel that would otherwise hinder the centres' operations. Caregivers and parents often take on crucial roles, from managing daily routines, such as feeding and enforcing discipline, to organizing learning spaces and maintaining the safety of facilities (Kiende & Orodho, 2019). Their involvement reflects a broader understanding that early childhood education is a communal responsibility, essential for laying a strong foundation for young children's cognitive and social development (Tafirenyika, Mhizha, & Ejuu, 2023). These efforts illustrate how community-led contributions fill critical gaps in support that would typically require external resources, underscoring the community's commitment to sustainable early childhood education (Mhizha, Tafirenyika, & Ejuu, 2022; Tafirenyika et al., 2023).

However, despite strong community engagement, socio-economic challenges and traditional beliefs about disabilities present notable barriers to fully inclusive early childhood education. Caregivers in these settings frequently face limitations such as inadequate access to assistive devices and training; yet remain committed to developing school readiness skills in children, particularly those with disabilities, by nurturing essential self-care, social, and motor skills (Tafirenyika et al., 2023). Many



communities turn to culturally relevant practices and locally available materials to address these needs, which can help in creating inclusive learning environments even in the absence of formal resources (Mhizha et al., 2022). This community-driven approach, often inspired by local philosophies such as Ubuntu, highlights the resilience and adaptability of caregivers and community members in promoting inclusive early education (Kiende & Orodho, 2019; Tafirenyika et al., 2023). Through collective effort, they promote an environment that values each child's potential, underscoring the role of community involvement as a pillar of early childhood development and inclusivity (Mhizha et al., 2022).

The roles of parents, educators, and community members in inclusive home-based early learning are interrelated and collectively vital. Each group contributes unique strengths and perspectives, forming a comprehensive support system that enhances children's development in holistic and impactful ways. Through collaborative efforts, these stakeholders facilitate the scalability and sustainability of home-based early learning models, ensuring that all children, irrespective of their backgrounds, have access to high-quality early education that adequately prepares them for formal schooling.

4.2.1 Strategies for engaging and empowering stakeholders

The engagement and empowerment of stakeholders, particularly parents, teachers, and community members, are essential for the success of inclusive home-based early learning initiatives like SIHEL. In these learning models, stakeholders need effective strategies that not only involve them in daily operations but also ensure that they contribute meaningfully to sustaining the programme long-term. Stakeholder engagement in early childhood education is widely recognized as a key factor in creating supportive learning environments, promoting inclusivity, and facilitating transitions from early learning centres to formal schooling (Epstein, 2018). Therefore, empowering stakeholders with knowledge, resources, and a sense of agency in educational practices is critical for the achievement of sustainable outcomes.

One strategy to engage stakeholders in home-based early learning is through capacity-building workshops, which equip parents, teachers, and community members with the skills and knowledge to support children's learning effectively. Capacity-building initiatives emphasize hands-on training in play-based pedagogies, inclusivity practices, and the essentials of early childhood development. An experimental study in Nigeria revealed that when parents and teachers receive structured, relevant training, they become more proactive and confident in supporting children's learning needs (Okondugba et al., 2020). Another experimental study in Serbia by Glumbic et al., (2022) revealed that caregiver training significantly improved the speech, language, and communication skills of children with developmental delays. Training workshops tailored to local contexts not only bridge knowledge gaps but also allow parents and teachers to feel respected and valued as integral members of the learning process. According to Okondugba et al., (2020) training programme focused on early learning strategies enhance the engagement of caregivers, leading to improved outcomes in children's cognitive and social skills.

In the SIHEL framework, capacity-building workshops are envisioned as a collaborative approach, with sessions led by trained educators and peer facilitators who understand the specific needs of children in marginalized communities (Mhizha et al., 2022). By using local educators as trainers, the workshops build trust and promote a shared understanding of learning objectives across stakeholders (Tafirenyika et al., 2023). In these sessions, emphasis is placed on inclusive strategies that cater to children with disabilities or diverse learning abilities, aligning with SIHEL's goal of inclusive early learning. Moreover, research has shown that peer-led workshops encourage parents to share experiences and challenges, promoting a collective support system within the community (Day et al., 2022). This collaborative approach ensures that learning is tailored to the cultural and social contexts

of the community, making it easier for parents and teachers to adopt and integrate these strategies at home and within community spaces. Another effective strategy is community-led resource sharing, where community members contribute to and support home-based learning through the provision of resources such as educational materials, learning spaces, or even local expertise (Ahasu et al., 2024). This approach leverages the collective strengths of communities, which often possess resources and knowledge that can be invaluable to early learning programme (Mhizha et al., 2022). In contexts where resources are limited, community-led resource sharing helps to alleviate financial burdens on individual families and enhances the accessibility of learning materials and spaces for all children, irrespective of economic background (Kiende & Orodho, 2019). For example, community members might donate safe play materials, offer spaces within community centers or churches for learning activities, or volunteer as aides in home-based centres. This approach reduces costs and creates a sense of community ownership and accountability, as stakeholders view the initiative as a shared community asset rather than an externally driven project (Schaughency et al., 2019).

Community-led resource sharing is also closely tied to the sustainability of educational programme. In a study on community-based early learning centers, Mhizha et al., (2022) found that stakeholder-led resource initiatives promoted long-term commitment, as communities had a vested interest in the programme's success. By encouraging this ownership, the SIHELI model can enhance the durability of its home-based learning models, making them less dependent on external funding and more resilient to socioeconomic changes within the community. Additionally, involving community members in resource management offers them a platform for leadership development and social cohesion, which further strengthens community support for early learning programme (Ahasu et al., 2024). A feedback mechanism is another critical strategy for empowering stakeholders, as it allows parents, teachers, and community members to voice their thoughts on the curriculum, instructional practices, and operational challenges of the learning programme (Epstein, 2018). Feedback mechanisms are typically established through regular meetings, surveys, or informal discussions, providing insights into areas where the programme may require adjustments (Ahasu et al., 2024). A dynamic feedback system not only facilitates timely responses to stakeholders' needs but also encourages active participation from parents and teachers, making them feel genuinely involved in decision-making processes (Ahasu et al., 2024; Kiende & Orodho, 2019). For example, periodic parent-teacher meetings or community forums allow stakeholders to discuss challenges they face in implementing play-based pedagogies or inclusive practices, which can then be addressed through targeted interventions (Ahasu et al., 2024; Tafirenyika et al., 2023).

Feedback mechanisms also enhance accountability and transparency, as stakeholders understand the programme's goals, challenges, and impact more clearly. According to research by Bos-Nehles et al., (2022), effective feedback systems in educational settings build trust among stakeholders and creates a collaborative environment where everyone is committed to achieving the shared goal of educational improvement. In the SIHELI context, establishing clear channels for feedback can help address any misconceptions parents might have about play-based learning, offer insights into the specific needs of children with disabilities, and highlight practical barriers that teachers may face in implementing inclusive practices. Feedback gathered from these mechanisms can inform future training sessions and resource allocations, making the programme more responsive and adaptive to local needs. The engagement and empowerment of stakeholders in the SIHELI model are foundational to its success and sustainability. Strategies such as capacity-building workshops, community-led resource sharing, and dynamic feedback mechanisms not only equip parents, teachers, and community members with essential skills and resources but also promotes a sense of ownership, collaboration, and trust. These approaches ensure that stakeholders are not just passive participants but active contributors, promoting inclusivity and resilience in home-based early learning programme. Aligning these strategies



with local cultural and social contexts, enhances the ability of the SIHELI framework to create supportive learning environments that drive long-term educational and social benefits.

4.2.2 Challenges and opportunities

Implementing inclusive home-based early learning approaches presents a mix of challenges and opportunities, particularly in marginalized communities where resources are limited. A primary challenge is the lack of sustainable funding and resources to establish home-based learning environments. In low-income settings, many parents struggle to provide basic learning materials or create an educationally supportive home environment (Gelir, 2019). These financial constraints can limit the inclusivity and effectiveness of early learning initiatives, particularly for children with disabilities who may require specialized resources or adjustments (McCoy et al., 2016). Irregular funding from external sources further exacerbates this issue, making it difficult to scale or sustain the programme over time (Gelir, 2019).

Resistance to pedagogical change is another significant hurdle, especially in communities where traditional, teacher-centred education dominates. Inclusive play-based learning may be unfamiliar and perceived as less effective compared to formal instructional methods. As demonstrated in the study of Quartey & Casely-Hayford, (2023), parents and community members, often unacquainted with the long-term benefits of child-centered learning, may hesitate to embrace such approaches. Angrist et al., (2023) highlighted that in many low- and middle-income countries, rigid educational practices impede the integration of innovative, inclusive methods. Without sufficient advocacy and culturally sensitive training, these reservations can undermine programme adoption and success (Angrist et al., 2023; Barnett et al., 2020). Another critical challenge is the limited capacity of teachers to implement inclusive, play-based pedagogies in home-based settings. Teachers often lack specialized training in inclusive education, particularly for supporting children with diverse learning needs (Quartey & Casely-Hayford, 2023). Inadequate access to professional development programme further restricts their ability to create adaptive and engaging learning environments (Okondugba et al., 2020). Without a strong foundation of teacher expertise, the quality of education provided in home-based settings may be inconsistent, limiting its potential impact (Schaughency et al., 2019).

Despite these challenges, inclusive home-based early learning presents significant opportunities to enhance educational access and equity. One of the most promising benefits is the potential to nurture a culture of shared responsibility within communities. Actively involving parents, teachers, and community actors, early learning initiatives strengthen collective ownership of children's education, creating a supportive ecosystem that sustains the programme (Kiende & Orodho, 2019). Ahasu et al., (2024) argued that community-driven approaches encourage resource sharing, collaborative problem-solving, and greater long-term commitment, thereby ensuring the initiative's sustainability and impact. The adaptability of home-based learning models is another key opportunity. These programme can be tailored to align with local cultural practices and community needs, making them more relevant and acceptable to stakeholders. Schaughency et al., (2019) stress the importance of culturally sensitive materials and community engagement in building trust and promoting ownership of home-based early learning initiatives. Studies show that culturally relevant programme foster greater parent and community involvement, ultimately enhancing child outcomes and increasing acceptance of inclusive pedagogies (Baker et al., 2016; Barger et al., 2019).

Additionally, inclusive home-based early learning initiatives provide a platform for empowering marginalized voices, particularly those of women and caregivers, who are often central to early childhood development (Mhizha et al., 2022). Programme that actively involve women in decision-making and implementation processes not only enhance the quality of education but also contribute



to broader social and economic empowerment (Darkwah, 2010). Women’s active participation as facilitators and leaders in early learning initiatives can help dismantle traditional gender roles and build more equitable communities. At the policy level, stakeholder involvement creates opportunities to influence national and regional education strategies. Evidence from successful community-driven initiatives can be leveraged to advocate for policies that prioritize inclusive early learning and stakeholder engagement (Ahasu et al., 2024). Policymakers are more likely to support programme that demonstrate strong community backing and tangible outcomes, making stakeholder involvement a critical component of advocacy and scaling efforts (Ahasu et al., 2024; Kiende & Orodho, 2019).

Stakeholder engagement in scaling inclusive home-based early learning models is a complex endeavour. While resource constraints, resistance to change, and limited teacher capacity pose challenges, the opportunities for fostering community ownership, cultural relevance, and empowerment makes SIHELI a promising approach. Sustained investment and collaborative efforts will be critical to overcoming barriers and realizing the full potential of the initiative.

4.3 Play-based learning and early childhood development

Play, sometimes considered *games*, are a valuable tool for promoting learning in classrooms since they are played in environments that children are accustomed to. Due to their ecological friendliness and strong ties to the cultural education that takes place in indigenous contexts, indigenous games provide an alternative to dominant cultures. Nonetheless, learning in schools is dominated by Western versions of games that are purposefully produced and digitalised by industry (Almeida and Simoes, 2019; Matsekoleng et al., 2024). Play is the essence of a preschooler's existence because it provides them a haven to bring to the fore desires, goals, sentiments, ideas, and the desire to actively participate in his or her surroundings. While supporting children's cerebral, emotional, social, and moral growth while meeting their biological and psychological demands (Petrovska et al., 2013). Also, games are an important form of entertainment for children, through which they can organise independently, and acquire knowledge, enrich their experience, and develop skills and habits. Due to different roles in the games that, allow the child to gain personal experience of good and bad, about what is positive and what is not in behaviour. Games further have significance for special needs education (Petrovska et al., 2013).

According to Gray and MacBlain (2015: 213), “play lies at the very core of children’s development”. And has for over a decade become a powerful and innovative way of teaching and learning. This is because of the numerous benefits associated with play-based (or game-based) learning for the learners. For example, it has been theoretically and empirically verified that learners are motivated to learn and become emotionally involved in the teaching and learning processes when it is augmented with play-based activities as well as enjoy the learning (Hartt et al., 2020; Sardone and Devlin-Scherer, 2016). Others have also associated play-based learning to improved abilities including language, cooperation and communication among children who engage in play-based learning while improving their academic achievements. This requires teachers to methodically understand how school-aged children engage with, gain from, and develop related abilities through play or games (Avdiu, 2019; Guan et al., 2024; Mart et al., 2023). Play in the preschool years enables children to explore and make sense of the world around them. It also helps them develop their imagination and creativity (Bizuwerk, 2024). Empirical studies confirm the multifaceted role of play-based learning in early childhood education (ECE) including the positive impact of play-based approaches on children’s holistic development, encompassing cognitive, social, emotional, and physical domains (*such as* Lin et al., 2024; Priyono et al., 2021; Sardone and Devlin-Scherer, 2016; Sia et al., 2023). Thus, from infancy, children have a natural ability to learn about the world through play. Play-based learning creates a space in which



children are free to experiment, explore, analyse, tackle and solve problems using their inherent capabilities such as curiosity and imagination (UNICEF South Africa, 2019).

The above is supported by growing body of empirical research. van Liempd et al. (2018) adopted a sample of 61 children from 10 child day care centres in Netherlands and showed that there is a relation between the physical characteristics of the playroom and young children's exploration of space in centre-based childcare. The quasi-experimental study of Priyono et al. (2021) among learners with intellectual disability indicated that games have an influence on students' motor skills, physical, social, emotional and cognitive aspects. However, it was reported that moderate mentally retarded learners had difficulty engaging in physical activities or basic movements. Hence, they could participate in playing activities but need simple directions and practices that could help their motor skills development. Sia et al. (2023) established that outdoor play has favourable and considerable impact on academic learning and school readiness. The authors recommended therefore that significant stakeholders including parents, preschool educators, and preschool providers should make sure that appropriate outdoor play yards are provided in preschools for children's full development and academic achievements. Similarly, Lin et al. (2024) experimentally employed data from 60 rural Chinese children aged 5–6 years to suggest that the traditional Anji Play significantly improved cooperation in children. Additionally, Groeneveld et al. (2022) in cross-sectional study on 103 home-based childcare settings, including 103 female caregivers and 162 children (86 boys), showed that boys showed lower involvement (than girls) when they were in the care of a less sensitive caregiver and higher involvement (than girls) when they were in the care of a more sensitive caregiver.. This study implies that it is important, especially for boys, to be cared for by a sensitive caregiver, who supports and encourages children to be involved in their play, and to explore the world around them (Groeneveld et al., 2022).

In sub-Saharan Africa, studies indicate that children exposed to diverse play types fosters holistic development, highlighting the importance of manipulating and experimenting through play (Adams et al., 2024; Irene et al., 2022; Lunga et al., 2022; Ndlovu et al., 2023; Ogunyemi and Ragpot, 2015; Selepe et al., 2024). In Rwanda, play was emphasised as a powerful tool for learning and not just recreational activity in early childhood education. Play-based learning was done using locally available materials to create a rich and stimulating learning environment. This resulted in the learning being more meaningful, enjoyable while also increasing children's engagement, motivation and effective learning (VVOB Rwanda, 2023). A qualitative research in South Africa, Lunga et al.'s (2022) supported holistic development of play-based learning of young children, and recommended that practitioners and parents should maximise the use of a play-based methodology in both social and learning environments. Worku et al. (2018) examined the effects of play-assisted intervention integrated into basic services on the developmental performance of children living with foster families in extreme poverty in home-based ECCE settings in Southwest Ethiopia. They concluded that if a quality and intensive home-based play-assisted stimulation is given in a resource-limited context, the benefits for children under five are quick and meaningful, particularly for social-emotional and language skills (Worku et al., 2018).

Moreover, Haryadi (2020) indicated a notable disparity in the speaking abilities of eighth-grade students who were taught using traditional games, modern games, and none of them (conventional learning without media or games). Therefore, the best way to help children enhance their speaking skills is to utilise new games, but playing classic games is also more beneficial than using none. In the Ghanaian context, a quantitative study among sample 200 participants found that children who were exposed to various forms of play perform well in their cognitive, motor, social and emotional and



speech and language skills development, therefore, providing children opportunity to learn through manipulating and experimenting for themselves (Serwaa, 2022). In the same vein, Adams et al. (2024) in Ghana underscored that play-based pedagogy is a catalyst for holistic development, nurturing cognitive, social, emotional, and physical growth in children. Their review findings showed that the potential of play-based approaches to empower learners, foster innovation, and promote inclusivity, ultimately shaping a more holistic and culturally enriched educational experience.

On the other hand, Pyle and DeLuca (2017) and Pyle et al. (2018) revealed challenges faced by teachers at the kindergarten level in Canada. According to their research, there was a misalignment in the perspectives of teachers concerning the purpose of play and what is assessed by the teachers during play. While three common challenges with integrating play and literacy learning was found: play is less structured, direct instruction plays a key instructional role and difficult to plan and feeling uncertain how to implement guided play (Pyle et al., 2018). In the African setting, Ntshangase and Venketsamy (2022) added that practitioners encountered challenges in implementing play-based pedagogy although it is mandatory. Ndlovu et al.'s (2023) qualitative study explored the impact of play-based learning on the development of children in mobile ECCE centres among eight (8) practitioners. Using the thematic approach, the findings revealed that the practitioners in rural areas had an insufficient understanding of teaching using play pedagogies. Thus, having a negative impact on standard provisions for play pedagogies suited for young children. Selepe et al.'s (2024) South African research also explored the views and beliefs of the practitioners about the use of play pedagogy in rural ECD centres. The participants reported that integrating play pedagogies when planning their lessons and assessing children's progress was challenging. Also, the results showed that ECD practitioners in rural centres lack the skills and material resources to implement play pedagogies. Irene et al. (2022) concluded in a qualitative study that teachers' struggles with improvisation and mitigation of challenges of poverty, their attempts to implement play-based learning is hindered by managers who want to turn Grade R into Grade 1 in the Limpopo province of South Africa. These challenges were similarly highlighted in Ogunyemi and Ragpot (2015) conducted in Nigeria and South Africa. The study showed that challenges were faced with use of playful learning in early childhood education centres.

The role of parents in early childhood education has also been emphasised. For instance, Wallace, Johnson, Potato, and De-Ming (2024) explored the process of co-creating free play experiences between parents and children in the context of the "PLAYBAG" project, a home-based free play intervention protocol in Hong Kong. The study identified four core elements for parental education in kindergartens: relating rapport, capturing moments, co-creating new experiences, and re-authoring identity. To them, these elements enhance parental education on home-based children's free play. It was recommended that social workers should collaborate with designers to create suitable materials for home-based free play. This was consistent with Courtois et al. (2024) who explained that the complexity of the context within which play happens need to be understood. They specifically indicated that it is important to value and understand how culture, social and economic inform variations in how play. Though constructive play happens in multidimensional spaces, Smith (2018) added that functional play usually occurs in traditional environments. It could be gleaned from these studies that the sociocultural environment within which learning and play occur at the ECCE level is important in shaping the outcomes for younger children.



4.3.1 Selected indigenous traditional games in Ghana

In African contexts, indigenous traditional games, a cultural legacy of our ancestors that spans thousands of years, have been passed down to subsequent generations by oral, visual, or auditory means (Hassani and Afazeli, 2024). Rhymes, stories, poetry, music, wrestling, and dancing are essential cultural elements through which childhood play was promoted in traditional Africa (Ogunyemi and Henning, 2020). Other indigenous traditional games including ball games, jumping games, and running games that need physical activity and exercise, are conducted in groups and necessitate both gross and fine motor skills (Hassani and Afazeli, 2024). These games are enjoyable and physically difficult activities that may be used for entertainment, relaxation, and the development of advantageous physical qualities. Through these activities children can develop cognitive, linguistic, social, emotional, physical competencies, confidence, enhancing their overall development through play (Hassani and Afazeli, 2024). However, Beeck (2018) argues that these indigenous traditional games are characterised by different in terms of rules and play. Some of these traditional games which are mostly played in Ghana and by children are discussed below:

Oware:

Oware is a game often played by two players; however, it may also be played alone or by up to six participants. The game employs forty-eight marbles and a board including twelve circular portions. The slots are organised into two rows, each including six positions. An interesting feature of oware is that it does not need a board, since rural children often excavate holes in the ground and use dried palm nuts for gameplay (Owusu-Mensah and Baffour, 2015). The game starts with four marbles in each position, and each player, on their turn, removes all marbles from one location on their side of the board and distributes them in an anticlockwise direction until all marbles are assigned. The player's turn concludes, allowing the opponent to have their turn. The aim of the game is to "capture" the maximum number of marbles, since the player with the highest total at the end is deemed the victor (Owusu-Mensah and Baffour, 2015).

The rules of the Oware Game are as follows: (i) four marbles are allocated to each of the 12 circular spaces; (ii) each player moves in an anticlockwise manner, vacating the original hole; (iii) when the final marble is deposited into an opponent's hole containing 1 or 2 marbles, the player captures those marbles along with any adjacent hole on the opponent's side containing 2 or 3 marbles; (iv) if the opponent's holes are devoid of marbles, the player must replenish the opponent's holes if feasible (Owusu-Mensah and Baffour, 2015). If unable to do so, the player captures all remaining marbles on their side; (v) a player is prohibited from placing any marbles back into the original hole from which they were removed, particularly if it is a heavily loaded hole that completes more than one revolution on the board; (vi) each player retains the remaining marbles in their territory when they cannot be captured. All calculations on strategy, save for those by novices, should be conducted mentally; the objective of the game is to 'capture' a greater number of marbles than one's opponent. Capturing 25 of the 48 marbles in the game is enough to achieve this objective. Given the even number of marbles, the game may conclude in a tie, with each player having 'caught' 24 marbles. Owusu-Mensah and Baffour, 2015.

In Ghana, two prominent styles of play are anenam and abapa. Anenam is a game of chance whereby a player's turn continues until they "sow" their last marble into an unoccupied hole. A player continues until that time by collecting all the marbles present in the spot where the last marble from their hand is placed. During the turn, all clusters of precisely four marbles in a single location are gathered. Players gather groups of four marbles from the area next to their position (Owusu-Mensah and Baffour, 2015). The one exception to this rule arises when a player deposits their last seed into a spot on the



participation. The game of dame specifically requires strong reasoning and critical thinking skills. Consequently, before to executing any “move,” a player must ensure that the action does not provide an advantage to the opponent for capturing their marble. The game also familiarises players with geometric forms, like squares and circles. Additional geometric ideas, like diagonal and linear, are acquired throughout the game (Owusu-Mensah and Baffour, 2015). A systematic review of 39 published studies revealed that the principal benefits of employing board games as an educational instrument encompass affordability and accessibility; wide applicability and adaptability; the reduction of communicative and cognitive obstacles; increased motivation, engagement, and learning; and the promotion of novel experiences and skills (Teixeira et al., 2024).

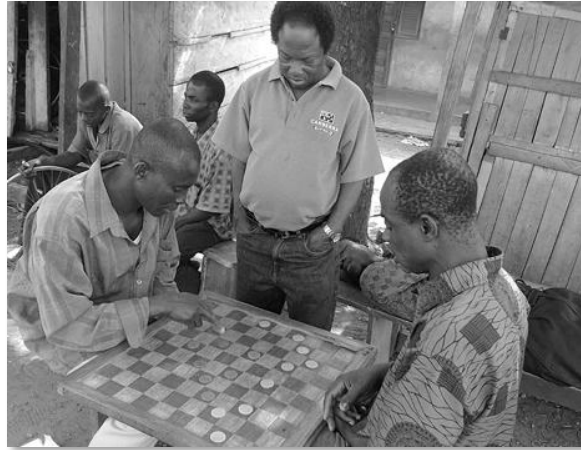


Figure 2. The Dame game being played by locals of a community

Counters

Counters Ball is a replica of a football game, with the only difference that instead of using a PlayStation to play, you use bottle tops (used as footballers), any small round object (used as the ball) and recreate some goal posts. Players take turns in hitting their counters to get the ball into the opponent’s goal post (Mohammed-Nurudeen, 2024).



Figure 3. A child playing counters

Antoakyire

Pilolo

The players gather at a start/finish line. The leader then yells, 'Pilolo!' And the players run to find a hidden object and get back to the finish line first, as shown illustrated figure 6. The person who crosses the line first wins (Mohammed-Nurudeen, 2024).



Figure 6. Children happily engaging in the pilolo game

Ampe

Ampe is a traditional outdoor game played by two or more people (usually only girls). It involves rhythmic clapping, jumping, and quick reflexes as demonstrated in figure 7 below. Players take turns performing specific movements and clapping patterns while jumping over lines drawn on the ground. This game originated in Ghana but is now also played in other African countries (Mohammed-Nurudeen, 2024).



Figure 7. Female children and their male counterparts playing ampe

Chaskele

Chaskele is a local bat-and-ball game played between two teams of two players. It is a Ghanaian game played by children and it is like cricket. The ball is made with a crushed tin can and a stick is used as a bat. Chaskele is played with crushed cans, stick, car tyre or bucket. A minimum of two players can start the game, one begins as the defender and the other, the scorer (Mohammed-Nurudeen, 2024).



Figure 8. Individuals playing chaskele game

4.3.2 Indigenous games/play and early childhood education and care outcomes

In indigenous cultural settings, learning is an experience process whereby ongoing exposure and interaction with environmental situations cultivate the knowledge necessary for managing them, requiring sociocultural relations, and systems and structures (Beckman et al., 2018; Ford et al., 2020). Children mostly use materials for play that are readily available in their environment, such as assorted tiny stones, empty boxes, and abandoned items like bottle caps, electrical wires, pantyhose, bricks, polish tins, and shoe boxes. Children, whether deliberately or inadvertently, contribute to environmental cleanliness by gathering resources for their play activities (Matsekoleng et al., 2024). Thus, indigenous games and stories remain crucial to the teaching and learning process at the foundational level. Indigenous games have long been utilized in communities and schools throughout the world to promote the acquisition of reading and numeracy skills. Research has consistently promoted the use and inclusion of indigenous games in early childhood curricula and practices in many regions of the world, particularly sub-Saharan Africa (Nakawa, 2020; Ogunyemi and Ragpot, 2015).

Consequently, play activities that are indigenous are becoming more popular and pivotal as a teaching strategy in early childhood education settings and are essential to cross-cultural understanding and practice (Hadebe-Ndlovu, 2022; Matafwali and Mofu, 2023). Scholars have therefore suggested that the most effective indigenous games that are well-known to early learners or pre-school children need to be used in school because of the prospects associated with literacy, numeracy abilities, educational successes, social and intellectual development and future prospects for children (Mwinsa and Dagada, 2024; Sanga, 2017).

Indigenous games as a pedagogical tool

In an experimental study, Lin et al. (2024) adopted 60 rural Chinese children aged 5–6 years studied the Anji Play teaching model, suggested that the intervention based on Anji Play significantly improved cooperation in children. In Rwanda, play was emphasised as a powerful tool for learning and not just recreational activity in early childhood education. Play-based learning was done using locally available materials to create a rich and stimulating learning environment. This resulted in the learning being more meaningful, enjoyable while also increasing children's engagement, motivation and effective learning (VVOB Rwanda, 2023). In Zambia, Matafwali and Mofu's (2023) demonstrated how these games can foster cultural understanding and developmental skills in Zambian children. Their research documented indigenous outdoor activities that are both culturally and developmentally appropriate to provide resource materials for play-based learning in ECE centres. Parents, teachers, grandparents

and teenage boys and girls who were participants on this participatory action research indicated that documenting of native games may be used as a resource capital to improve play-based learning in an early childhood education context. Informed by their findings, the study recommends that educators may successfully adopt play-based learning provided they have easy access to a variety of native games that are developmentally appropriate. These authors therefore argued that there is the need for pedagogical practices of early childhood education to be reconsidered so that learning and development are viewed as being influenced greatly by contextually sensitive play and exploration (Matafwali and Mofu, 2023). Other studies (such as Egbedeyi, 2024; Sulistyaningtyas and Fauziah, 2019; Tavakoli and Baniasad-Azad, 2017) confirmed that the use of indigenous play and games as instructional tools. For example, quantitative research in Ondo State of Nigeria found that indigenous traditional games highly employed in the teaching and learning activities as a resource to develop preschool children holistically. This was disclosed by a random sample of 200 teachers who participated in the research (Egbedeyi, 2024).

In confirming the use of traditional indigenous games as pedagogical tools at the ECE level, a quantitative research by Sulistyaningtyas and Fauziah (2019) in Indonesia on how traditional games are used in early childhood education, established based on data from 40 ECE teachers that, about 55 percent of teachers frequently adopted traditional games while 45% seldomly used these games. The authors in their study consequently recommended the use of traditional games in ECE to offer several advantages for early childhood development (Sulistyaningtyas and Fauziah, 2019). Also, another research, Mwinsa and Dagada (2024) also determined the efficacy of indigenous games in promoting literacy and numeracy skills among preschool children. Their sample comprised 10 purposively chosen teachers from rural schools that operate early childhood education centres. Findings from their study showed that when utilised properly, indigenous games may help children develop their reading and numeracy abilities. Consistent with these finding, Tavakoli and Baniasad-Azad (2017) after reviewing 12 traditional indigenous games that heavily emphasized physical activity, and social skills, carried out an experimental study that assessed how local indigenous games training indicated in their study on how local indigenous games affected the of 60 children aged 8 to 12. According to the results, the local indigenous games group's physical literacy increased more and had a rise in academic success in the experimental group and the control group, but the local indigenous games group experienced a greater gain. The study's findings indicated that local indigenous games were a superior model for enhancing physical literacy and academic success. In addition, Hassani and Afazeli (2024) added that playing indigenous-local games may significantly improve physical literacy implying that children become more physically literate they come into contact with indigenous local games.

In addition, Kavuma and Ejuu (2024) shared the view that incorporating indigenous pedagogical principles could shape teacher education programme which results in the creation of more effective and culturally relevant educators. Windisch et al. (2003) employed a sample of 18 parents whose children attended indigenous-specific childcare centres and playgroups to investigate indigenous parents' attitudes to Indigenous-specific early childhood programme. The researchers revealed that it is important for programme to be tailored to indigenous communities to ensure inclusiveness in mainstream early childhood education programme. Nonetheless, evidence from 90 purposively chosen teachers and 30 learners engaged by Ogunniran and Badru (2023) in Nigeria concluded that teachers' opinions about the educational usefulness of traditional games are greatly influenced by the class they teach. While Mwinsa and Dagada (2024) based on results from a purposive sample of 10 teachers from four rural schools that have early childhood education centres showed that even while some teachers found it difficult to implement indigenous games in their teaching, traditional games should be taught with parental participation, and training in native games should be rigorously provided to teachers through continuous professional development seminars and workshops. both



teachers and parents due to the benefits for preschoolers' learning. While the benefits of indigenous games are evident, there is a clear indication from these studies that teachers may require additional training and support to effectively incorporate these games into their pedagogy.

Cognitive development

Literature (Balladares et al., 2024; Iasha et al., 2021; Iwandana et al., 2021; Moloi et al., 2021) reports that cognitive abilities and motor skills of children could play a significant role in children's literacy and performance in school. This has been empirically shown to be associated with children's increased exposure to traditional indigenous play-based approaches. For instance, Iasha et al. (2021) revealed that the traditional game of Congklak can enhance working memory. These findings suggest that indigenous games can be effective tools for cognitive development. In supporting this evidence, Wang's (2015) research in Japan on how *dolanan anak*, a traditional Japanese children's singing game helped children grow cognitively. He reported that through these traditional indigenous games, children pick up broad knowledge about themselves, their families, and their surroundings, and they learn to obey orders and regulations as well as internalise societal norms like cooperation. From a similar perspective, a systematic review of existing experimental studies among pre-kindergarten and kindergarten by Balladares et al. (2024), assessed the impact of board games on children's cognitive development. The findings indicate that substantial improvements in mathematical abilities were shown in 52% of the assessed tasks when comparing pre- and post-assessments. Significant changes were seen in 32% of the instances when comparing the intervention and control groups. Board games were found to improve arithmetic skills in youngsters aged 45.6 to 100.6 months, facilitating statistically significant advancements. Based on their findings, it was recommended that the impact of these games on various cognitive and developmental abilities be explored. Iasha et al. (2021) determined how playing traditional games may help school children's memory through a quantitative experimental research design. The study's findings demonstrated that the traditional game of Congklak had an impact on school children's memory capacity. This was shown by the experimental class's average post-test score, which was greater than that of the control group. In the same instance, Ogunyemi and Henning (2020) among South African and Nigerian childhood educators, assessed the importance of play in the education of African children. Data from reviews of literature on traditional play in African and survey conducted with a sample of 62 respondents highlighted that properly deploying traditional African play in teaching children could improve the mental development of children.

In the Philippines, Dizer, Logan, and Raval (2022) quantitatively investigated the advantages of playing native Philippine games from the perspective of 130 Filipino men and women using an experimental design. The results showed that the Philippine local games were thought to promote holistic development including cognitive development and mental abilities of children that resulted in the promotion of favourable academic performance outcomes. Lyoka (2011) also examined how 203 children's indigenous games were affected quantitatively by children's fundamental motor skills. It was observed that the children in the study revealed that their involvement in indigenous games at home and school led to their curiosity. This in turn increases the possibility of learning and future growth. In addition to the cognitive development abilities of traditional indigenous games, findings based on secondary data gathered from books, individual sources, journal articles, newspapers, websites, government records, and other sources proved that when traditional Kashmiri games are used in teaching children, they tend to benefit from language skills (Gul, 2023). Further studies highlight traditional indigenous games to be an avenue where children acquire numeracy skills. A qualitative Zimbabwean study by Tarashika and Jairo (2023) investigated the function of Shona cultural games and activities in the teaching and learning of mathematics at the ECD level. Ten study participants



were engaged in in-depth interviews, and it was brought to light that traditional games—arauru or pada, the play button game, playing house (mamhuza), Tsoro or draft zairakaora, Nhodo /inota, and sarurawako—helped the children to learn about mass and weight, balance, and mathematical addition and subtraction as well as observation and focus. Children were also made to engage in cultural activities such as winnowing, making brushes and brooms out of grass or reed (tsanga), making pots out of clay, and creating fires out of mud or stones to facilitate teaching of sets, forms, area, and direction. These important results underscored the need for early childhood and development caregivers to keep encouraging students to play cultural games like “nhodo”, “pada”, and “mahumbwe”, among many other cultural activities that are part of their cultural context and align with their society's norms and values, since these activities help to develop the child (Tarashika and Jairo, 2023).

Similarly, Elpidang and Herrera (2016) investigated the Sik'lut game played by the Mamanwas of San Pablo, Jabonga, Agusan del Sur, through interviews, participant and non-participant observations. Results showed that mathematical ideas like probability, permutation, and combinatorics are reflected in the game. This gave teachers access to practical applications of mathematical ideas that have cultural connotations. These findings elaborated in the studies above are consistent with that of Hassani and Afazeli (2024) who found in their research that playing indigenous-local games may significantly enhance understanding and knowledge among learners. Moloi et al.'s (2021) study underscored the usefulness of indigenous games in teaching and learning Grade 4 arithmetic word problems. Through a participatory action research approach with learners, the department head, teachers, parents, and local royal family members, they found potential of *kgati (skipping rope) moves to improve learners' math word problem instruction. And that when indigenous knowledge is integrated into mathematics, learners are better able to perceive, translate, and connect it with mathematical ideas. Learners' inventiveness and imagination were much enhanced when they learned word problems using kgati movements (Moloi et al., 2021). Early on, Tavakoli and Baniasad-Azad (2017) statistically observed that local indigenous games group's cognitive function was greater than that of the control group. Hare (2012) attempted to understand how indigenous knowledge affects early indigenous children's literacy development in Canada through interviews with early childhood educators and community stakeholders and group discussions with indigenous families whose young children are enrolled in the national Aboriginal Head Start on Reserve (AHSOR) programme. Findings established that families engage in a wider range of literacy-related activities than in early learning settings. Moreover, oral tradition, land-based experiences, and ceremonial activities form the foundation of their indigenous knowledge systems' literacy orientation. These components form the basis for improving educational results for indigenous children and families, whose connection with education has typically been difficult, when linked to schooling and literacy discourses (Hare, 2012). Balbawang and Felix's (2023) further reported in quantitative quasi-experimental research on how well indigenous games can improve maths proficiency second graders that the use of native games is successful in improving the performance of second-grade students in their mathematics course based on observed significant improvement in the experimental group's results as well as those of the control group.

Physical and motor skills development

Moreover, research has consistently shown that the ability of children to enact physical movements and remain physically active is positively impacted by indigenous games (Mwinsa and Dagada, 2024; Tavakoli and Baniasad-Azad, 2017). This was shown in the study of Supeni et al. (2020). They found an approach for developing learning models for learners using traditional Javanese game songs and the meanings inherent in the lyrics through qualitative descriptive research. Evidence from their study rough to light that at most 70% of the teachers knew of Javanese cultural values. While only 40 percent



of them understood that the motor competences of children could be enhanced through traditional musical activities and dancing. And 20 to 30 percent of the schools had gameplans to help learners develop their motor skills. In addition to Tavakoli and Baniasad-Azad's (2017) findings that increased physical literature and academic success it related to enhanced exposure to traditional indigenous games, they also documented among the sample of 60 children aged 8 to 12 years that the cognitive capacities of the learners improved significantly among both the experimental who were exposed to local indigenous games and the controlled group. However, these positive cognitive functioning outcomes were greater compared to the controlled group. Previously, Lyoka (2007) also affirmed these results indicating that children in Africa play a variety of traditional games daily, which differ depending on the tribe, community, and distance. This influenced the author to examine how African traditional games for children may help them learn the basic movement abilities needed for contemporary sports. Children's native games were revealed to have a complementary function in the development of basic movement abilities among African children aged two and eight. A study on the importance of play in the education of African children by Ogunyemi and Henning (2020) using a sample of 62 respondents highlighted that properly deploying traditional African play in teaching children could improve the physical development of children.

In the same vein, Sabzi et al.'s (2023) after experimentally exposing boys aged 7 to 11 in the sociocultural setting of Iran to a three 45-minute training sessions each week while playing local indigenous games, the physical fitness indicators including agility, speed, flexibility, and explosive power were greatly impacted by eight weeks of playing local indigenous games. Hence, children exposed to local indigenous games reported feeling more physically fit. Hassani and Afazeli (2024) added that playing indigenous-local games may significantly improve fundamental motor skills, movement competence, and coordination. Sriwidari et al. (2018) added to the wealth of literature with a focus on how a modified version of hopscotch affects children's social and gross motor development. Their findings indicated that children's gross motor development is impacted by the modified hopscotch. The results suggest experimental and control groups' post-test results differed significantly ($p < 0.05$). Likewise, Nonis and Hudson (2006) investigated how preschoolers' motor skills could be impacted by traditional games and unstructured play. A sample of 192 children were recruited and divided into play groups and played typical games. The traditional group played five different types of traditional games over the course of five weeks, whereas the play group played free play for 20 sessions. The results showed that all participants' balance and general motor skills were considerably enhanced by playing either traditional games or unstructured play. In the performing 30 categories, the traditional group fared better than the play group in terms of general motor skills and hand dexterity. However, both groups demonstrated significant gains in general motor skills, balance, and hand dexterity in the underperforming 30 category (Nonis and Hudson, 2006). In terms of developing motor skills, it was established among 30 children chosen from seven schools in Tehran's District, to examine the effects of local indigenous games on the motor skills of children who have both high and poor emotional intelligence that, children with strong emotional intelligence had higher motor skills when exposed to indigenous games (Oranghi et al., 2021).

Additionally, studies by Melianasari and Suparno (2018) and Dizer, Logan, and Raval (2022) have shown that indigenous games can promote physical development and motor skills in children. In the Philippines, Dizer, Logan, and Raval (2022) quantitatively investigated the advantages of playing native Philippine games from the perspective of 130 Filipino men and women using an experimental design. Results showed that the local games were thought to promote holistic development particularly children's physical development. Yet again, how well local games that combine a game sense and comprehension teaching strategy affect students' motor abilities was quantitatively determined using an experimental design (Keshavarz and zade, 2022). The study was carried out among 55 girls who



were split into four groups at random: conventional group, hybrid group of teaching game for understanding and game sense, game sense group, and teaching game for understanding group. It was concluded that the hybrid group's gross motor skills changed by 79%, while the teaching game for understanding group's fine motor abilities and total motor skills improved by 84% and 85%, respectively. In summary, the study's results indicates that the hybrid strategy enhances children's motor abilities (Keshavarz and zade, 2022). Hashemi and Shieikh (2018) among children aged 6 to 8 compared the impact of local indigenous games and jump rope plans on the development of fine-motor abilities. With the aid of a cluster random approach and a sample of 120 children with the indicated age, the sample were categorised into four groups: the control group, the jump roping plan, the local indigenous game, and the compound. The findings indicated that the three groups—the local indigenous game, the jump roping group, and the compound group—had superior fine-motor abilities compared to the control group. When compared to the local indigenous game group, the jump roping group performed better in visual-motor control and upper limb speed and dexterity abilities. However, the local indigenous game group outperformed the jump roping group in terms of speed competence. Additionally, the compound group outperformed the other groups in all three basic motor abilities.

Furthermore, Azlan et al. (2021) in their comparative quantitative study on learners' preferences for playing traditional games compared to free-play physical education classes using 56 participants concluded that learners preferred playing traditional games over free-play PE lessons. And physical activity is encouraged when enjoyable and significant activities including traditional games are incorporated into the physical education classes. The implication is that traditional games promote increased physical activeness among learners in the study. Aribowo et al. (2019) identified and examined how Indonesian traditional games affect fourth-grade male learners' gross motor abilities at an elementary school. Using a quantitative factual design and an experimental approach, the study showed that there are notable variations in gross motor abilities between Indonesian traditional games that use traditional tools or methodologies and those that do not. It was established that there was an interaction between Indonesian traditional games and agility towards gross motor abilities. Besides, Louth and Jamieson-Proctor (2019) through mixed methods research examined the impact of an inclusive physical activity intervention programme on for example, children's enjoyment and participation in physical activity, self-perceptions, physical self-efficacy, and how this affected their overall social-emotional health and well-being. This was done in five schools with 235 children and seven instructors participated in in Queensland, Australia with a focus on traditional indigenous games. The study documented that there existed statistically significant changes over time in learners' pleasure, inclusion, perceptions, and physical self-efficacy. The positive experiences generated by the traditional indigenous games' intervention programme led to improvements in students' physical self-efficacy through inclusive physical exercise. Therefore, validating how the inclusive and collaborative strategy outlined in traditional indigenous games may greatly help in the growth of inclusive physical education in schools, which boosts students' physical self-efficacy and advances their socioemotional skills (Louth and Jamieson-Proctor, 2019).

In Gul's (2023) qualitatively study, it the value of traditional Kashmiri games in promoting the well-rounded personality development of children was demonstrated. Children's physical development improved because of their involvement in playing traditional games. Melianasari and Suparno (2018) collected data about the value of traditional games as a means of fostering the development of children between the ages of five and six. Through a quantitative descriptive analysis, the study found that traditional games are used in 45% of learning sessions among kindergarten learners to improve their motor abilities. Yet again, Laely and Yudi (2018) determined how classic games like hopscotch affect children's development of kinaesthetic intelligence. With a single group pre- and post-test design, the study used an experimental research design comprising 15 children in the ages of 3 to 4 years. It was



observed that there exists a significant difference in kinaesthetic intelligence between the first and final measurements following the use of the classic game hopscotch as a learning exercise. Unlike these studies, Lyoka (2011) in another study among 203 children, to know how their fundamental motor skills were affected by indigenous games explained that there existed no form of relationship between indigenous games and physical motor performance dimensions.

Social development: emotional, relational or interpersonal skills

Indigenous games, rooted in rich cultural traditions, have long been recognised as powerful tools for developing children's capacity to socially interact, and improve socioemotionally (such as Gul, 2023; Hassani and Afazeli, 2024; Kavuma and Ejuu, 2024; Louth and Jamieson-Proctor, 2019; Melianasari and Suparno, 2018; Sriwidari et al., 2018). Exploratory sequential research on how indigenous pedagogy affected the development of life skills in children in Uganda adopted a sample of 84 individuals including district education officers, ministry representatives, local council leaders, parents, elders, and religious leaders. According to the research, parents' approaches integrated theory and practice daily. And these indigenous practices effectively prepares children for character, good attitudes and social orientation, which underscores the need teacher education institutes to combine indigenous and contemporary approaches rooted in fundamental African values (Kavuma and Ejuu, 2024). The study by Moyo and Chinamasa (2022) investigated the educational aspects of traditional games (the Tsoro variant of holes and stones) in teaching mathematics in elementary schools. The study used purposive samples of 56 instructors and 126 students from eight elementary schools in Zimbabwe's Makonde area of Mashonaland West Province. Traditional games were identified to suitably help in the developing the social skills and communication ability of children because they allow children to interact with others and are free from language barriers. Again, the research findings of Hassani and Afazeli (2024) highlighted that playing indigenous local games may significantly improve the fundamental coordination and interpersonal connection skills of children.

Also, Sriwidari et al. (2018) added the wealth of literature with a focus on how a modified version of hopscotch affects children's social and gross motor development. Their findings indicated that children's social development is impacted by the modified hopscotch because the social development outcomes for the experimental and control groups' post-test results differed significantly ($p < 0.05$). Melianasari and Suparno (2018) similarly collected data about the value of traditional games as a means of fostering the development of children's interpersonal relationships between the ages of five and six. Through a quantitative descriptive analysis, the study found that 94% of kindergarten instruction did not make use of indigenous traditional games to foster the development of children's interpersonal skills. Although traditional games are used in 45% of learning sessions, they nonetheless serve to improve children's motor abilities. Later, quantitative research (Dizer, Logan, and Raval, 2022) in the Philippines investigated the advantages of playing native Philippine games from the perspective of 130 Filipino men and women using an experimental design. Results showed that the local games were thought to promote children's socioemotional development and connectivity (Dizer, Logan, and Raval, 2022). In line with this findings, Louth and Jamieson-Proctor (2019) through mixed methods research examined the impact of an inclusive physical activity intervention programme on for example, children's enjoyment and participation in physical activity, self-perceptions, physical self-efficacy, and how this affected their overall social-emotional health and well-being. This was done in five schools with 235 children and seven instructors participated in in Queensland, Australia with a focus on traditional indigenous games. The study documented that traditional indigenous games may greatly help in advancing their social-emotional (Louth and Jamieson-Proctor, 2019).

In addition, a study employed secondary data from books, individual sources, journal articles, newspapers, websites, government records, and other sources to qualitatively demonstrate the value



of traditional Kashmiri games in promoting the well-rounded personality development of children. It was demonstrated from the results of the study that children's social and emotional development all benefit from playing and engaging in traditional games (Gul, 2023). In the research of Wang (2015) conducted in Japan, how *dolanan anak*, a traditional Japanese children's singing game helped children grow socially and cognitively was explored. The authors reported that through these traditional indigenous games, children were able to pick up broad knowledge about themselves, their families, and their surroundings. As well, they were able to learn to obey orders and regulations, and internalised societal norms like cooperation. In the same vein, Hadebe-Ndlovu (2022) focused on finding out how teachers experience the use of indigenous games in teaching mathematics in six inclusive education schools in the KwaZulu-Natal province in South Africa. Qualitatively, semi-structured interviews and teacher narratives, framed by the philosophy of *ubuntu*, were used to generate data. Teachers were shown to believe that indigenous games encourage and endorse spontaneous interaction among learners as they communicate with their classmates and recognise the form of play from their community life. Ogunyemi and Henning (2020) conducted research among South African and Nigerian childhood educators, assessed the importance of play in the education of African children. Data from reviews of literature on traditional play in African and survey conducted with a sample of 62 respondents highlighted that properly deploying traditional African play in teaching children could improve their social and emotional development.

Life skills development

While emphasising social orientation as earlier discussed, exploratory sequential research on how indigenous pedagogy affected the development of life skills in children in Uganda adopted a sample of 84 individuals including district education officers, ministry representatives, local council leaders, parents, elders, and religious leaders. Parents' approaches were found to integrate theory and practice daily in teaching their younger children based on strong African values. And these indigenous practices were shown to be effective in preparing children for character, and good attitudes. Based on their findings, the authors suggested that to create pro-cultural modern teachers, teacher education institutes should mandate academic programme that combine indigenous and contemporary approaches rooted in fundamental African values (Kavuma and Ejuu, 2024). From the perspective that specific curriculum challenges are peculiar to rural areas and could be addressed through ubuntu perspectives, Mncube and Hadebe-Ndlovu's (2023) interpretive phenomenological study identified that indigenous games are implicit in the curriculum and teachers do their best to imbue local games in the early grades curricula. Numerous indigenous games were shown to be an ideal way to incorporate sustainable rural learning techniques that are helpful for teaching life skills in a decolonised manner. Teachers demonstrated their pedagogical subject knowledge and abilities to teach life skills through the use of ubuntu ideology and native games (Mncube and Hadebe-Ndlovu, 2023). Quantitative research (Dizer, Logan, and Raval, 2022) in the Philippines investigated the advantages of playing native Philippine games from the perspective of 130 Filipino men and women using an experimental design. Results showed that the local games were thought to promote life skill applications (Dizer, Logan, and Raval, 2022).

Consistent with the evidence above, Jafari, Merrikhpour and Khodadadeh (2023) found using data from randomly selected sample of 30 parents (15 each) from Iran and Turkey that Iranian parents place greater value on traditional games and uphold their values in their children's lives than do modern games. However, Turkey was identified to be more affected by the rapid changes of the modern era on children's lives than Iran was. It was further established in the study that these traditional games help children develop a variety of skills. Malobola-Ndlovu (2021) in their study focused on game songs and games for children as a component of the traditional literature that has



been passed down orally from generation to generation. As such he demonstrated how game tunes and games for children may help those who are struggling, concluding that traditional Shona children's activities and songs facilitated children's ability to express themselves and internalise their struggles. Also, Madondo and Tsikira (2022) at the early childhood development (ECD) level, highlighted the benefits of traditional children's games as a teaching tool for fostering holistic child development. The research focused traditional children's games using data from 10 ECD teachers from rural schools in five chosen provinces in Zimbabwe participated in this grounded theory study. The results indicated that traditional children's games are culturally relevant because they consider the sociocultural background of the children. And children acquire abilities in the classroom through cultural heritage materials, such as games, that are practical and long-lasting for both their present and the future (Madondo and Tsikira, 2022). DinanThompson et al. (2014) in an Australian study in a public school where learners engage in traditional indigenous games showed that the learners gained positive experiences playing the games serving as an avenue for them to learn life skills.

Other life skills children acquire through early education that includes traditional indigenous games have been identified to include motivation, self-confidence, being cooperative, sovereignty and self-determination (Hassani and Afazeli, 2024; Riley et al., 2023; Taheri and Chahian, 2015). According to research findings of Hassani and Afzelin (2024), playing indigenous-local games may significantly improve physical literacy and its constituent parts. Indigenous local games can also be utilised as a strategy to help people become more physically literate. Fundamental can all be enhanced by these activities. Besides, these games could enhance motivation, and self-confidence. Adding to this, a study examined the enjoyment, entertainment, and health benefits of a sample of traditional tribal games. The study showed that through this kind of play, children may be ready for the reality of life, especially acquiring cooperative abilities (Taheri and Chahian, 2015). In support of the importance of traditional games on life skills acquisition, Riley et al. (2023) focused on a project, Nature's Way-Our Way, that was created to establish indigenous games, activities, cultural linkages, and traditional teachings as the foundation for hazardous play and physical literacy at early childhood education centers throughout Saskatchewan in Canada. In their research, the theoretical foundations of Etuaptmuk (Two-Eyed Seeing), used to weave together the strengths of indigenous knowledges with Western knowledge through indigenous métissage practices (land and story-based approaches to curriculum informed by relationality) was examined. The programme promoted indigenous self-determination and sovereignty (Riley et al., 2023). In Turkey, Aypay (2016) ascertained how traditional Turkish children's activities contribute to the teaching of universal principles through a content analysis of 421 games from Turkey's traditional games reported in previous studies. Results emphasised that the value of self-gratification present in every game. Nearly every game placed a strong emphasis on accomplishment as well, with players mastering predetermined competitive objectives before their rivals could. Also, the games placed a strong emphasis on the value of power, which was always associated with success. Thus, gaining the authority to confiscate other people's property or punish the loser or losers after a successfully winning a game. The games also emphasised values universalism, self-direction, stimulation, security, conformity, and charity (Aypay, 2016).

This important literature reviewed here clearly illustrates that traditional play practices and games could have the potential teach important life lessons to children.

Health development

A few recent studies (Louth and Jamieson-Proctor, 2019; Rahman et al., 2020; Riley et al., 2023) argues that traditional indigenous games has positive impact of traditional games on the physical and mental health of children. Louth and Jamieson-Proctor (2019) in mixed methods research examined the impact of an inclusive physical activity intervention programme on for example, children's enjoyment



and participation in physical activity, self-perceptions, physical self-efficacy, and how this affected their overall social–emotional health and well-being. Data from five schools with 235 children and seven teachers participated in Australia with a focus on traditional indigenous games. The study documented that traditional indigenous games may greatly help in the growth of inclusive physical education in schools, advancing their physical health (Louth and Jamieson-Proctor, 2019). Research conducted by Rahman et al. (2020) adopted a purposive sample of 10 classic Indian traditional games to investigate the advantages of traditional Indian folk games. The findings suggested that the traditional games served several purposes and was therapeutically beneficial for children with neurodevelopmental disorders. Riley et al. (2023) gathered data based on a project created to establish indigenous games, activities, cultural linkages, and traditional teachings as the foundation for hazardous play and physical literacy at early childhood education centres throughout Saskatchewan in Canada. These authors examined the theoretical foundations of Etuaptmumk (two-eyed seeing), used to weave together the strengths of indigenous knowledges with Western knowledge through indigenous *métissage* practices (land and story-based approaches to curriculum informed by relationality). Results indicated that the programme promoted holistic health and wellbeing across one's lifespan (Riley et al., 2023). While Ogunniran and Badru (2023) in Nigeria recommended that school educational stakeholders need to use traditional games and resources to help learners develop improved health.

Cultural preservation and community engagement

One notable role of traditional indigenous play activities at the ECE level is the preservation of cultural traditional, practices and heritage. This notion is supported in research that addressed the resourceful role of indigenous games in promoting and developing children holistically. In that study the authors clearly suggested that there is the need for caregivers to be given the opportunities to employ indigenous games to avoid their extinction (Egbedeyi, 2024). This is due to the fact that as these children engage in traditional indigenous play activities they are able to acquire and improve their cultural knowledge and significance as well as their community social practices (DinanThompson et al., 2014). The research carried out in an Australian context focused on public schools with learners engaged in traditional indigenous games and showed that the learners disclosed that they gained positive experiences playing the games leading to improved cultural knowledge and cultural significance among the learners and community social practices. Ejuu (2019) emphasised the significance of preserving and revitalising indigenous practices, such as traditional games, to maintain cultural identity, connect with the past and foster a sense of belonging. By embracing cultural heritage, individuals can build a strong sense of self and contribute positively to the global community. In Turkey, Aypay (2016) ascertained how traditional Turkish children's activities contribute to the teaching of 10 universal principles. A content analysis of 421 games from Turkey's traditional games was examined in previous studies. Results emphasised that the value of tradition and conformity. Yet, in terms of teaching morals, traditional children's games now seem to be a lost opportunity, necessitating the creation of games that help children develop greater moral principles (Aypay, 2016).

Moreover, studies by Matafwali and Mofu (2023) and Mwinsa and Dagada (2024) emphasized the importance of community engagement in preserving and promoting indigenous games. By involving parents and community members, educators can strengthen the connection between schools and communities, ensuring the continuity of cultural heritage. For example, in Zambia, Matafwali and Mofu's (2023) research documented indigenous outdoor activities that are both culturally and developmentally appropriate to provide resource materials for play-based learning in ECE centres. Parents, teachers, grandparents and teenage boys and girls who were participants on this participatory



action research shared that incorporating indigenous games improved home-school connections by actively engaging the community. These community- and/ home-school connections ensures that what the children are taught have cultural relevance to them. Madondo and Tsikira (2022) added that traditional children's games provide cultural relevance young learners because they are in line with their sociocultural background. To Mncube and Hadebe-Ndlovu (2023) indigenous play activities could promote sustainable rural learning in a decolonised way. Jafari, Merrikhpour and Khodadadeh (2023) further found using data from randomly selected sample of 30 parents (15 each) from Iran and Turkey that Iranian parents place greater value on traditional games and uphold their values in their children's lives than do modern games. In the views of Kavuma and Ejuu (2024) indigenous pedagogy equips children with the cultural knowledge and values necessary for success in both traditional and modern contexts.

4.4 Home-based early learning interventions and early childhood development

In this section, a large body of research on the child development and care outcomes are reviewed for home-based early childhood education or learning. In this context, home-based early learning is considered to include both home- and centre-based (i.e., familial and non-familial childcare arrangements offered in the provider's home), underpinned by a blend of the home-based and centre-based approaches (Ejuu et al., 2023).

4.4.1 Home-based early learning intervention preference and use

Studies reviewed have reported on family or parents preference for and use of specific type of ECCE (Helmerhorst et al., 2019; Morrissey et al., 2022). Morrissey et al. (2022) found that children in rural counties are less likely to attend private centre-based ECE, and nonprofit childcare programme expenditures in rural areas fall behind. In Netherlands, a national representative sample of 99 caregivers chosen from 50 childcare centres showed that supportive environment is generally provided by caregivers in centre-based through mind-related comments and sensitive interactions. Thus, just as parents, these professional caregivers could consider children as independent people when their thoughts, desires and emotions are prioritised during peer-to-peer group interactions. Mind-mindedness in centre-based childcare is an indicator of the quality of the relationship between the caregiver and the group of children (Helmerhorst et al., 2019). Besides the centre-based education and care for younger children, there is evidence of home-based interventions in the early ages. In Ang and Tabu' (2018) qualitative study conducted in Japan and England, caregivers activities and interactions with children of at most 4 years was explored. The researchers concluded that there is a distinct, specialised care and pedagogy as well as family support that underpins home-based childcare. According to Varmuza, Perlman, and White's (2019) research in Canada, more parents relied on unlicensed home childcare for their children between the age of 12 months and entry into school. While others (24%) indicated no form of regular form of non-parental childcare. But centre-based care was dominant among families from higher income profiles. On the other hand, lower income working parents with lower levels of education were more likely to use unlicensed HCC or report using no non-parental care at all. Consistent with Morrissey et al.'s (2022) findings, in rural areas, a review study by Anderson and Mikesell (2019), suggested that parents tend to select and have access to family- or home-based childcare more frequently than centre-based care. This trend could imply a significant difference in childcare preferences and availability between rural and urban areas. While the types of care may differ, the impact of quality on child development remains consistent across different settings. Hooper (2019) added that these home-based childcare providers' roles are broadly categorised into relational, functional and professional. Several strategies including findings assistants



or preparing outside childcare hours are used as strategies in these centres though assistance is considered important in managing the multiple roles they perform. In the same year, it was identified through a quantitative study of 3,493 home-based providers could be considered ‘educationally aware’, ‘caregiver’ and ‘educationally focused’, with education being dominant. The extent to educational activities is implemented acted as an important basis for differentiating among these groups. Hence, despite the homogeneity in terms of demographic features, their instructional practices differ (Hooper and Hallam, 2019). A recent study conducted by Smyth and Duta (2023) explained that in Ireland and Scotland, use of centre-based care at 9 months and 3 years was markedly higher among the top income quintiles.

In the context of New Zealand, data from 25 home-based educators suggested that there was much emphasis on more talk about print concepts, sounds, and relating to real-life experiences in a storybook that rhymed and was set in a locally relevant context. Again, more descriptions and predictions or inferences in a storybook that did not rhyme and was set in a less personally relevant context (such as Africa) were used. In these centres, children used more talk about sounds and relating the book to their own experiences in the local/rhyming book than in the international/on-rhyming book (Timperley et al., 2020). In sub-Saharan Africa, Ejuu and Opiyo (2022) conducted a desk review to explore the African conceptualisation of flourishing in the Ubuntu lens and how communities are coming together to cultivate it by implementing home-based early childhood learning centres. In their research, home based early learning centres operated by parents was seen as a core activity to nurture Ubuntu, as each family and community member becomes useful in providing a service that helps others to flourish at different stages of life. Another rural-based exploratory study by Ejuu et al. (2022) in Ugandan communities using a sample of 120 purposively chosen parents, caregivers and teachers, found that, participants supported the establishment of inclusive home learning centres and already have learning expectations of their children by the age of 6 years. Again, men were found to be in support of inclusive education while women are more available for early childhood care services. The study concluded that communities have preferences for some activities carried out in the centres if established (Ejuu et al., 2022).

In a home-based schooling programme, 10 random kindergarten teachers qualitatively assessed a numeracy-based app prototype that uses a local language (IsiNdebele). The findings suggested that kindergarten teachers had a positive opinion towards the app, as they perceived the prototype to be useful, easy to use, and simple, and that learners would be eager to use it (Maphosa and Dube, 2020). Moreover, Ebrahim (2012) studied of Family-Based Model (FBM) of the Little Elephant Training Centre for Early Education (LETCEE) in rural KwaZulu-Natal and the Community and Family Support Programme (CFSP) of Lesedi Educare in urban Free State. In the LETCEE model, the FFs and friends assumed the main role as teachers while other community members form a supportive structure. It was observed that grandmothers and teenagers were attracted to the open-air classrooms which used surrounding homesteads on a rotational basis for early education. While older children and children with disabilities were encouraged to join playgroups. Young children were introduced to early education in their mother tongue. Parents and/or caregivers witnessed how the mother tongue can be used to educate young children, and this was particularly important in South Africa where many parents feel that an English-only education will give their children a head start. Adding to this, children were introduced to school culture through selected resources in a toy bag, a flexible timetable and a play-based approach. Besides, children were also examined through health check, and they were then introduced to songs, games and rhymes, followed by story-reading time (Ebrahim, 2012).

Nevertheless, the preference for or enrolment in centre-based and/or family care or home-based centres for younger children are shaped several factors including higher parental education, income-



needs ratio, number of children, special education needs among others (Biersteker et al., 2016; Petitclerc et al., 2017; Ripamonti, 2023; Sibley et al., 2015). In Norway, Sibley et al. (2015) used the mother and child cohort study (n=60,270) that families with higher parental education and income-needs ratios were more likely their 18 months children in centre-based ECEC. Later, quantitative studies of Biersteker et al. (2016), and Ripamonti (2023) respectively reported in their studies that parental involvement and increased cultural capital investment were associated with the development and rate of participation in centre-based early childhood education and development. Biersteker et al.'s (2016) findings were based on a research sample of 242 ECCE centres in South Africa. A cross-country study comprising a total sample of 21,437 children aged 5 to 41 months in Netherlands, USA, Norway, UK, and Canada. The results indicated that low maternal education, poor income and having more than one child reduced the use of centre-based ECE services (Petitclerc et al., 2017). Similarly, Sullivan et al. (2018) in a longitudinal study employed a national representative sample of 4,000 young children. It was documented that sociodemographic characteristics of families, children and their contexts play a key role in predicting the type and quality of ECCE used. For instance, they reported that while the provision of subsidies improved access and use of non-parental centre- and home-based ECCE among children without special needs, their counterparts with special needs was less. This implies that subsidies did not consistently lead to families with special needs accessing high quality care (Sullivan et al., 2018).

Additionally, a meta-inference based on data gathered from a sample of caregivers, policymakers, community leaders and a quantitative survey of 222 respondents disclosed that in Bangladesh, child safety fears, social and religious norms and low social capital interacted to explain caution characterising the use of centre-based ECCE although there is evidence of need (Elsey, Fieroze, Shawon, Nasreen, Hicks, Das, Huque, Hirano, Wallace, & Saidur, 2020). Consistent with findings discussed earlier, population-based quantitative research by Kachi, Kato, & Kawachi (2020) in Japan established that children from the lowest household income quintile compared to those in the highest quintile had greater chances of receiving centre-based ECCE at age four. While socioeconomic disadvantages (greater number of siblings, low maternal education, having a non-Japanese parent), children with development and health problems (developmental delay, congenital diseases, preterm birth) were associated with increased non-centre-based children aged three. This means that children characterised by health, socioeconomic and development difficulties had lesser chances of not gaining centre-based and/or early childhood education and care. Also, Fram and Kim (2012) in their study underscored the need to address racial disparities in access to centre-based ECCE. Their study showed that childcare centres with predominantly Black children tend to have lower quality, including lower structural quality and less caregiver warmth, compared to centres with predominantly Hispanic or White children. However, the outcomes for children in Hispanic-dominated childcare settings were significantly worse in four out of five developmental areas, compared to children in other racial/ethnic groups. Gordon et al. (2013) previously conducted national representative longitudinal research among 4-year-olds had mothers' priorities for care, families' cultural background, and perceptions of good local care options predicting their combining home- and centre-based care.

Furthermore, the crucial roles of home-school partnerships in fostering early learning (Coba-Rodriguez et al., 2020; Coelho et al., 2023; Muir, 2012; Sonnenschein et al., 2021). Studies by Muir (2012) and Coba-Rodriguez et al. (2020) demonstrate that parents, even those from low-income backgrounds, actively engage in their children's learning at home through various strategies, despite facing challenges such as language barriers and limited access to resources. However, these studies also emphasize the need for teacher support and guidance to effectively empower parents. Coelho et al. (2023) found a strong correlation between teacher education levels and the quality of home-school partnerships, emphasizing the crucial role of well-prepared educators in fostering these collaborations.



Furthermore, Sonnenschein et al. (2021) revealed that while parents prioritize reading, they often lack confidence in supporting their children's mathematics development. This highlights the need for teachers to provide parents with specific strategies, resources, and ongoing support to enhance their engagement in their children's mathematical learning journeys.

4.4.2 Home-based early learning initiative and developmental outcomes for children

Over a decade of research has provided evidence that early childhood education and care type is significantly associated with diverse positive outcomes for children's social, emotional, behavioural and academic (literacy and numeracy) outcomes either in home-based and/or centre-based early childhood education and care (Gupta and Simonsen, 2016; Oksman et al., 2019; O'Neill et al., 2013; Reynolds, 2022; Tervahartiala et al., 2024; Von Suchodoletz et al., 2023). India, Pakistan, and Zambia, Bann et al. (2016) found that a home-based early developmental intervention during the first 3 years of life can substantially decrease the developmental gap between children from families with lower versus higher resources, even among children in low- to middle-resource countries. Existing studies that report on these outcomes are thematically discussed.

Socioemotional and behavioural outcomes

A growing body of research suggests that centre-based early childhood education and care (ECEC) programme can have a positive impact on children's social-emotional development. Data from longitudinal research comprising a sample of 464, Oksman et al. (2019) investigated whether childcare arrangements at ages 3 or 6 are associated with self-reported adulthood sociability at ages 20 to 35 years. Based on the study's results, family daycare and centre-based daycare at age 3 and centre-based daycare at age 6 in comparison to home care, was associated with higher sociability later in life. The association was strongest for aspects of sociability that emphasize the willingness to be surrounded by other people and to be attached to them. In other words, characteristics of early care may contribute uniquely to the development of these aspects of sociability with effects that persist into adult life. This aligns with Parkes et al. (2021), who posited that centre-based care may mitigate socioemotional challenges for children from economically disadvantaged backgrounds. Further support for the benefits of centre-based ECEC comes from Von Suchodoletz et al. (2023), who found that higher-quality programme was associated with improved behavioural skills, social competence, and reduced behavioural and social-emotional problems. This is corroborated by Choi et al. (2024), who observed that increased hours of centre-based care, as seen in dual enrolment programme, predicted better teacher-reported school readiness, including crucial social-emotional skills. Comparative studies have also highlighted the advantages of centre-based care. Fukkink et al. (2024) observed superior social competence in children attending childcare centres compared to those in home-based care. Similarly, Gomajee et al. (2018) found lower levels of emotional symptoms and peer relationship problems, along with higher prosocial behaviours, among children in centre-based care compared to informal or childminder arrangements. These findings are further supported by Schochet et al. (2020), who concluded that centre-based ECE, particularly Head Start, outperformed home-based care in fostering prosocial behaviours. Ansari et al. (2017) also emphasized the role of social-behavioural skills in mediating the academic gains observed in low-income Latino children who participated in public school pre-kindergarten or subsidized centre-based care.

While the positive outcome persists, some studies suggest potential negative consequences of centre-based care for children. For instance, Lee et al. (2014) adopted data from the Early Childhood Longitudinal Study-Birth Cohort ($n = 6,950$). They observed higher levels of conduct problems among Head Start participants compared to those in parental care. Similarly, Johnson et al. (2014) in their research



adopted a national representative sample of 2,900, and they found that subsidized centre-based care was associated with more externalizing problems in children of native-born parents compared to unsubsidized home-based care. Several studies have also linked centre-based care to increased internalizing problems. In the same vein, Zhai et al. (2014) used data from 3,790 children in the 3–4-year-old cohort the impact of Head Start on children's cognitive and parent-reported social-behavioural outcomes to concluded that, compared with children in parental care and relative and non-relative care, Head Start participants were generally reported by parents to experience behavioural development. With these benefits persisting through first grade although some few differences were found between Head Start and other centre-based care. Tervahartiala et al. (2024) in Finland reported on comparative results on social competence and socioemotional problems in two-year-old children ($n = 1104$) who were either participating in out-of-home, centre-based childcare or were cared for at home by their parents in Finland. According to their results, mothers reported more internalising symptoms in toddlers participating in out-of-home, centre-based childcare when compared to children who were cared for at home. While no differences regarding externalizing symptoms or social competence were found. Overall, they concluded however that out-of-home, centre-based childcare is not associated with major differences in a toddler's socio-emotional development (Tervahartiala et al., 2024).

Consistent with the above research, Berger et al. (2021) used data from a large, nationally representative French birth cohort, the Étude Longitudinale Française depuis l'Enfance (Elfe) to estimate whether crèche attendance at age 1 has an impact on language, motor skills, and child behaviour at age 2. The findings indicated that crèche attendance has a negative impact on behaviour. Longitudinal research conducted by Bi, Ding and Yeung (2024), examined how the number of hours of early childhood education (ECE) is associated with young children's behaviour problems and early academic achievement in Singapore, with families using long ECE hours. Participants were 3- to 6-year-old children ($N = 2,452$). Their study brought to light that a greater number of hours in ECE was associated with more externalising behaviours. And beyond a saturate point, a greater number of hours was associated with fewer behaviour problems, both externalizing and internalizing. Also, Trijp et al. (2021) in a centre-based ECE study comprising a sample of toddler ($N = 1,561$) examined the association between children's temperament and well-being in centre-based early childhood education and care (ECEC), and whether this association is affected by ECEC process quality. The results revealed an association between temperament and well-being. With staff and child conflict moderating the association between shyness and well-being and between activity and well-being. High emotional behavioural support moderated the association between activity and well-being in these centres. Bakkenn et al. (2017) substantiated that sampled children who attended The Opportunity Project (TOP) Early Learning Centres had significantly fewer discipline referrals, and exhibited more appropriate behaviours including better social interactions, and were significantly more emotionally mature than their non-TOP peers.

Conversely, Sluiter et al. (2023) compared process quality and child functioning in Dutch centre-based care and home-based care and explored the role of the dyadic caregiver-child relationship. Participants in this study included 228 children from 74 locations (154 attending centre-based childcare, 74 home-based childcare). It was established that children in centre-based care exhibited lower well-being and higher problem behaviours relative to home-based care. Similarly, longitudinal studies have further highlighted potential concerns. Helsabeck et al. (2021) reported that consistent attendance in centre-based care from birth to five years was associated with adverse social-behavioural outcomes. Gottfried (2015) observed increases in problem behaviours and decreases in prosocial behaviours among children who experienced multiple years of centre-based care. Rusby et al. (2017) observed that US centre-based preschool classrooms typically allocate a significant portion of time to free-choice



activities (51%), followed by teacher-led instruction (30%). This diverse environment allowed for the development of crucial skills, such as social-emotional learning through peer interaction during free play. Additionally, early exposure to centre-based care may also have unintended consequences. Berger et al. (2021) found a negative impact of crèche attendance at age 1 on child behaviour at age 2. Complementing previous findings outlined, Bennet et al. (2020) observed that children enrolled in centre-based care at earlier ages exhibited higher levels of gender-typing patterns. These findings underscore the fact that while centre-based care can offer significant benefits, such as improved social competence and reduced emotional difficulties, potential risks, such as increased conduct problems and internalising symptoms, also need to be considered.

Another mixed methods study that examined the relations between safety knowledge and perceived action gained because of participation in a programme called ‘SeeMore Safety’, that combines preschool and home-based education for children aged four to six years by their parents and teachers, demonstrated a positive effect on preschool children's behaviour and reasoning about safety (O’Neill et al., 2013). Research by Green et al. (2021) using data from the UK Millennium Cohort Study (n = 14,376) established universal access to centre-based pre-school care may alleviate inequalities, while restricted access may widen some inequalities in socioemotional development. Like centre-based ECE programme, research supports the efficacy of home-based interventions for children with developmental delays. An evaluation study of the Sure Start programme in the UK showed that the intervention was partially successful in several ways concerning the behaviour and adjustment of preschool children and the interactions among parents and children. Again, linking teacher-led initiatives and health programmes to the intervention led to greater success (Sawyer and Bagley, 2016). Shin and Duc (2017) demonstrated the positive impact of a home-based programme on enhancing social skills in this population. This finding aligns with the broader literature suggesting that home-based settings can provide a familiar and comfortable environment conducive to learning and skill development. Also, children in Sure Start Local Programme (SSLP) regions demonstrated superior social development, exhibiting more independent and pleasant social behaviour than children in non-SSLP areas. Families in SSLP regions used more services to assist the development of their children and families and created better home-learning environments than families outside of SSLP areas (Melhuish et al., 2008). However, the Sure Start programme was earlier identified to have adverse effects on the children of teenage mothers, specifically, poorer social functioning (Belsky et al., 2006).

Recent research by Sluiter et al. (2023) in Dutch centre-based and home-based care settings has highlighted the potential benefits of home-based care beyond skill development. Their findings indicate that children in home-based settings may experience higher levels of well-being and exhibit lower levels of problem behaviors compared to those in center-based care. Importantly, Sluiter et al. (2023) emphasized the crucial role of “process quality” within the home-based care environment, suggesting that the quality of interactions and the overall caregiving experience significantly impact child outcomes. In South Africa, a study suggested that the non-centre-based models of ECD create opportunities for young children to experience various degrees of belonging with peers, their teachers, the buddies, the people who join in while they are being taught, the resources used, and they travel to familiar and unfamiliar places (Ebrahim, 2012). In contrast, Gomajee et al., (2018) found that children cared for by childminders displayed a higher likelihood of developing conduct problems compared to other childcare arrangements. Earlier, Gordon et al. (2013) based on a national representative study on 4-year-olds who attend both home- and centre-based childcare with those who attend either home- or centre-based care concluded that preschoolers’ average socioemotional outcomes generally did not differ between families who do and who do not combine care types. This evidence corroborated that



of Nores et al. (2019) who found through a randomised controlled trial that just eight months into the programme results indicate no effects on socio-emotional development of the children existed. However, the impact of ECEC can vary depending on factors such as child characteristics (e.g., temperament, socioeconomic background), cultural context, and the duration and timing of care. Studies from diverse settings, such as those by Lee et al. (2014), Bennet et al. (2020), and Bi, Ding, and Yeung (2024), have shown that the optimal duration and timing of care can influence both positive and negative outcomes. Furthermore, the quality of caregiver-child interactions, as emphasized by Vandenbroeck, Slot, and Hulpia (2021) and Trijp et al. (2021), plays a crucial role in fostering positive socioemotional development.

Cognitive developmental outcomes

Studies conducted in various settings, including Colombia (Nores et al., 2019; Bernal et al., 2019), Brazil (Leão et al., 2021), the United Kingdom (Green et al., 2021), and the United States (Choi et al., 2024; Lee et al., 2014) have examined the effects of different ECEC models (centre-based, home-based, and combined) on cognitive developmental outcomes of children. Centre-based childcare has shown promising results in enhancing cognitive development. Leão et al. (2021) in Brazil found that centre-based childcare attendance was associated with positive cognitive development outcomes, particularly for children with early and continued attendance. Additionally, Choi et al. (2024) observed that dual enrolment in both Head Start, and pre-kindergarten predicted higher teacher-reported school readiness skills, including cognitive skills. Lee et al. (2014) demonstrated that Head Start benefits were more pronounced for children with low initial cognitive ability. However, studies have also highlighted potential challenges. In the same instance, Bernal et al. (2019) in Colombia found that programme transfers had a negative effect on cognitive development. Green et al. (2021) in the UK emphasized that while centre-based preschool care may alleviate inequalities in cognitive development, restricted access can exacerbate them. Moreover, Nores et al. (2019) in Colombia reported large positive effects of a high-quality centre-based intervention on cognitive development in infants and toddlers, with girls benefiting the most.

Earlier, O'Neill et al. (2013) demonstrated that a combined preschool and home-based education programme positively impacted preschool children's safety knowledge and reasoning. Adding to these findings, Yusuf et al. (2023) highlighted the importance of developing effective centre-based learning models to stimulate children's metacognitive skills, emphasizing the need for a systematic approach that integrates the science process approach and fosters curiosity, creative thinking, and problem-solving skills. Rusby et al. (2017) observed that US centre-based preschool classrooms typically allocate a significant portion of time to free-choice activities (51%), followed by teacher-led instruction (30%), which resulted in children developing cognitive skills like listening and following directions during structured activities. Later, Davies et al. (2021) in the UK explored associations between time spent in ECEC by 8-to-36-month-olds, their socioeconomic background, and their growth in language and executive functions using parent-report data from 189 families. Cognitive executive functions were boosted by ECEC attendance during the period, regardless of socioeconomic background.

Academic outcomes: literacy, numeracy and transition

Among Danish children, enrolled in either centre-based day care or family day care at age 2, Gupta and Simonsen (2016) emphasised that centre-based day care improve the grades in Danish language in the final year of compulsory school. In longitudinal research conducted by Bi, Ding and Yeung (2024) in Singapore, identified a non-linear (u-shaped) associated with child outcomes. Before the turning point, a greater number of hours in ECE was associated with higher academic achievement.



After the turning point, a poorer academic achievement was identified. Zanoni and Johnson (2019) in quasi-experimental research examined associations between childcare subsidy use in early childhood and middle school learners' outcomes in licensed centre- or home-based care. The results provided initial evidence for longer term impacts of the childcare subsidy programme on children's school performance. However, educational dimensions were shown to be significantly poorer due to low educational quality in the quantitative baseline study in Belgium, among 200 family childcare providers. And unlike years of experience, pre-service training and supervision mattered in explaining these poorer educational outcomes (Vandenbroeck et al., 2021).

These academic outcomes include literacy (language), and numeracy (math) skills as evidence by Von Suchodoletz et al.'s (2023) systematic review and meta-analysis of previous studies. Their review assessed indicators of quality in centre-based ECEC programme and child outcomes of children aged 0-6 years. Results suggested that higher levels of ECEC quality were significantly related to higher levels of academic (literacy and math) outcomes. Yet, ethnic minority or socioeconomic family background differences in the associations were not found. Gordon et al. (2013) used a nationally representative found that preschoolers score higher on reading and math assessments, on average, when they attend centres, alone or in combination with home-based childcare, than when they are cared for only in homes, either by their parents or by others. O'Brien et al. (2014) in a quasi-experimental study among 158 early learners from low-income families in relation to children's level of vocabulary knowledge indicated that although all children demonstrated substantial language and literacy growth, children with the lowest pretest vocabulary knowledge in the intervention group achieved the greatest vocabulary gains and these gains differed significantly from their demographically matched peers who did not participate in the family literacy programme (FLP). Findings suggest that an FLP emphasizing authentic literacy practices holds promise in closing vocabulary gaps among children who enter early childhood classrooms with especially limited English vocabulary knowledge. In Johnson et al. (2014) who estimated the associations between subsidy receipt at age 4 and kindergarten cognitive and social outcomes, for children of immigrant versus native-born parents with the aid of a national representative sample of 2,900, being a child of an immigrant and enrolled in a subsidized centre-based care compared to subsidized and unsubsidized home-based care, was positively linked with reading. And children of native-born parents who were in subsidized care centre, displayed poorer math skills than those in unsubsidized centres than those in unsubsidized home-based care.

Further studies, Lee et al. (2014) and Feller et al. (2016) have confirmed these findings. Data from the Early Childhood Longitudinal Study-Birth Cohort ($n = 6,950$), to examine school readiness at kindergarten entry while comparing children who attended Head Start compared to those who experienced other types of childcares (prekindergarten, other centre-based care, other nonparental care, or parental care). Findings had higher early reading and math scores than children in other nonparental care or parental care. Head Start participants had lower early reading scores compared with children in prekindergarten and had no differences in any outcomes compared with children in other centre-based care (Lee et al., 2014). Feller et al. (2016) used a Bayesian principal stratification framework to estimate separate impacts for two types of compliers: those children who would otherwise be in other centre-based care when assigned to control and those who would otherwise be in home-based care. The evidence indicated that there exists a strong, positive short-term effects of Head Start on receptive vocabulary for those compliers who would otherwise be in home-based care. By contrast, there was no meaningful impact of Head Start on vocabulary for those compliers who would otherwise be in other centre-based care (Feller et al., 2016). Ansari et al. (2017) examined the third-grade outcomes of 11,902 low-income Latino children who experienced public school pre-



kindergarten or childcare via subsidies (centre-based care) at age 4 in the United States. Regression and propensity score analyses revealed that children who experienced public school pre-K earned had higher grade point averages than those who attended centre-based care 4 years earlier and higher scores on standardized assessments in math and reading in third grade.

Later, Bakkenn et al. (2017) reported that children who attended the Opportunity Project (TOP) early learning centres scored significantly higher on math and reading tests than the control group. A longitudinal study provided evidence based on a study of 12,430 kindergarten cohorts in America that, children who attend centre-based care in the year prior to kindergarten showed higher math and reading scores across neighbourhood contexts. Children in moderate-high poverty neighbourhoods showing stronger positive associations between who participated in Head Start or centre care participation and math and reading scores, respectively, compared to those participating in low-poverty neighbourhoods (Morrissey and Vinopal, 2018). From a similar perspective, a multinomial logistic regression analysis by Justice et al. (2020) provided results on the implementation of an evidence-based home reading programme by a sample of 128 caregivers of children with language impairment. Their data highlighted the fact that, dropout of the programme by parents was associated with child literacy skills. Schochet et al.'s (2020) study utilised national data and difference-in-differences models to assess the effects of these ECE setting comparisons on changes in doubly vulnerable children's academic and social-emotional outcomes evident at kindergarten entry for Head Start learners. The results suggested that centre-based ECE is more beneficial than parental care for language and literacy. This was because being enrolled in the Head Start programme was linked with better approaches to learning relative to public pre-kindergarten. Moreover, Davies et al. (2021) employed parent-reported data from 189 families. The outcome of the study was that receptive vocabulary growth was greater in children who continuously attended centre-based ECEC, with a stronger positive effect for children from less advantaged backgrounds.

McCormick, Pralica, Guerrero-Rosada, Weiland, Hsueh, Condliffe, Sachs and Snow (2021) in the US found among 401 students attending a community-based implemented public prekindergarten programme, and teachers that growth in skills slowed during summer for all children, but the patterns varied by domain and group. Non-White and dual language learners showed the largest drop-off in language skills during the summer. Lower-income students demonstrated slower summer growth in math skills than their higher-income peers. Students who were enrolled in summer centre-based care had faster growth in math skills than those who did not attend care. Yet lower-income students who attended centre-based care showed slower growth in language skills during the summer than similar nonattenders (McCormick, Pralica, Guerrero-Rosada, Weiland, Hsueh, Condliffe, Sachs and Snow, 2021). A randomized controlled experiment (RCT) by Aurora and Farkas (2022) using a sample of 18,120 children found that Latino children who participated in centre-based care during their prekindergarten year had significantly higher English oral language, reading, and math scores than their peers who did not participate in such programme. children from lower SES homes especially, additionally benefited in terms of oral language skills from participating in centre-based care. In France, Berger et al. (2021) used data from a large, nationally representative French birth cohort, the Étude Longitudinale Français depuis l'Enfance (Elfe) to estimate whether crèche attendance at age 1 has an impact on language, motor skills, and child behaviour at age 2. Results indicated that crèche attendance has a positive impact on language skills. Yet, the positive impact on language skills is particularly concentrated among disadvantaged children, implying that facilitating increased crèche access among disadvantaged families may hold potential for decreasing early socioeconomic disparities in language development (Berger et al., 2021). Green et al. (2021) in the UK among 14,376 stated in



their study that on average, non-centre based childcare improved vocabulary and centre-based care improved school readiness with evidence of socioeconomic inequalities observed for all outcomes.

A more recent study conducted by Smyth and Duta (2023) using data from sample five-year-old children enrolled in the Growing Up in Ireland study and the Scottish of the Millennium Cohort Study concluded that home learning environment plays a stronger role in explaining actual vocabulary differences in Ireland. Also, in the US, Carr et al. (2023) indicated that the Head Start group had higher literacy skills at the end of preschool in comparison to the home-based care group. While Olive et al. (2024) among a gender balanced sample of three-hundred-and-fourteen preschool children (aged 3–5 years), determined the effects of the Active Early Learning (AEL) childcare centre-based physical activity intervention on early childhood executive function and expressive vocabulary. Their randomised controlled trial established that the programme was effective in enhancing children's expressive language development. A Chinese study (Cui and Greger, 2024), examined the socioeconomic gaps in home-based and kindergarten-based shared book reading practices in China. The participants were 1,095 parents and 111 teachers in 69 classes from kindergartens. The results revealed that the socioeconomic gap in home-based shared book reading, and the resultant language exposure were significant. Kindergartens did not mitigate the socioeconomic inequities of language exposure related to shared book reading. Among 15 cohorts of children, the Sure Start centre was found to have short- and medium-term effects on educational results of children between the ages of 0 and 5 years and special educational needs especially among disadvantaged children (Carneiro et al., 2024).

According to Choi et al. (2024) findings over half of the children who enrolled in the Head Start and additionally participated in pre-kindergarten. Such dual enrolment, which reflects more daily hours of centre-based early care and education, predicted higher teacher-reported school readiness skills, including literacy, maths. Thus, these literacy and numeracy skills according to the literature facilitates the readiness and attendance to school by younger children at the early childhood phase (Smyth and Duta, 2023). The study of Smyth and Duta (2023) draws on among five-year-old children in Ireland and Scotland posited that home learning environment plays a stronger role in school readiness in Scotland. In confirming this, Ansari and Winsler's (2016) cohorts of children from low-income, ethnically, and linguistically diverse families ($n = 16,176$) in the US, brought to light that black and Latino children in public school-based pre-kindergarten programme consistently demonstrated greater kindergarten readiness when compared with their classmates in centre-based and family childcare, irrespective of demographic characteristics at preschool entry. In most cases, low-income children enrolled in centre-based care also exhibited greater kindergarten skills than their classmates who had attended family childcare (Ansari and Winsler, 2016). On the other hand, Carr et al. (2023) in the United States indicated that the between the Head Start group and the home-based care group, there were no other reliable differences emerged between these groups in terms of school readiness skills. Likewise, Shuey and Leventhal (2020) in longitudinal ethnographic research in three cities in the US explored low-income Latina immigrant mothers' ECE decisions ($n = 31$). Results indicated that mothers who participated in the study praised the learning opportunities and education their children received in formal centre-based programme but rarely linked it to preparation for elementary school.

While being ready for school with the required skills in turn, it facilitates regular attendance of school among children who enroll in centre- and home-based care. For example, Zandoni and Johnson (2019) who examined associations between childcare subsidy use in early childhood and children's middle school outcomes, Children who took advantage of the subsidy programme to enrol in licensed centre- or home-based care had reduced absenteeism in later grades (seventh and eighth grades). This finding was confirmed in earlier studies (Bakkenn et al., 2017; Ansari and Gottfried, 2018). According to



Bakkenn et al.'s (2017) quantitative study among children who attended The Opportunity Project (TOP) Early Learning Centres disclosed that the TOP group scored significantly higher attendance rates than the control group. In another similar research, Ansari and Gottfried (2018) concluded based on evidence from a longitudinal design on centre-based and full-day kindergarten that, children who attended centre-based care in preschool and kindergarten had fewer missed school days and were less likely to be chronically absent in kindergarten and first grade. Their study added that children on full-day kindergarten programme had more absences by the end of kindergarten but fewer absences by the end of the following year. They further explained that children who experienced more early educational arrangements were generally absent less frequently.

Besides being school ready and ability to attend school, transition to higher levels of education was also reported in the literature. As shown in the study of Bakkenn et al. (2017), not only did attendance improve but it was further revealed that the transition of children who were identified for special education into mainstream classes was faster than the control group. Fukkink et al. (2024) corroborated the findings of Bakken and his colleagues, following a Dutch-based study among toddlers (N = 110) on transition from childcare to elementary school. They found that the transition from childcare to elementary school was more successful if children attended centre-based care but not home-based care. Besides, additional research examining the associations between childcare attendance among 550 children from 24 to 36 months of age and their enrolment in higher education in young adulthood in Canada, documented the findings that children who attended informal childcare (i.e., with a relative or nanny) were more likely to pursue higher education in young adulthood relative to children in formal childcare (i.e., centre-based or licensed home-based childcare). The implication is that attending informal childcare benefited all children over 20 years later. Heterogeneity was found since the effect was dominant among low-income and non-employed families (Garon-Carrier et al., 2022). Using children from the Quebec Longitudinal Study on Child Development, Losier et al. (2022) investigated the long-term associations between the use of ECE and high school graduation while considering the sex of the child and the socioeconomic status of the parents as moderators. As part of the findings, it was identified that compared with children never exposed to centre-based care, those exposed early (i.e., before toddlerhood) had better odds of graduating from high school after controlling confounding factors. Late exposure to centre-based care was not related to high school graduation rates. In conclusion, exposure to regulated and centre-based ECE on a regular basis from toddlerhood to school entry was associated with higher rates of high school graduation.

Health and motor developmental outcomes

Yet another important theme reflecting in the literature is focused on the health, nutritional, and motor/physical outcomes of early childhood education and care (ECEC). And these studies have yielded diverse findings. Studies in Colombia have shown varying effects on nutrition. Nores et al. (2019) found no impact of a high-quality centre-based intervention on nutritional outcomes, while Bernal et al. (2019) observed a positive effect of programme transition from home-based to centre-based on nutritional outcomes of children. In Côte d'Ivoire, Brou et al. (2023) highlighted the importance of home-based learning activities in mitigating the negative effects of stunting on early childhood development. The authors therefore recommended that capitalising on the existing practices of families that show positive deviance in caregiving may provide a basis for culturally appropriate, low-cost interventions to improve school readiness among children in low- and middle-income countries, including children with stunted growth. Choi et al.'s (2024) findings also showed that over half of the children attending in the Head Start intervention additionally participated in pre-kindergarten. And this dual enrolment, which reflects more daily hours of centre-based early care and education, predicted higher teacher-reported social-emotional skills.



In terms of the impact of different ECEC settings on physical activity and sedentary behaviour, Tervahartiala et al. (2020) in Finland found that children in at-home childcare had higher overall cortisol levels, suggesting potential differences in stress levels. Martyniuk et al. (2016) in Canada found that children in centre-based facilities had greater nutritional scores. Hinkley et al. (2016) observed that preschool children were less active during care hours compared to outside care hours, while Tucker et al. (2015) found that centre-based childcare was associated with higher rates of sedentary time compared to home-based care and full-day kindergarten. Additionally, other studies have investigated the impact of specific interventions on motor development of children. For example, Chapelski et al. (2023) found that a home, school, and community-based physical literacy intervention significantly improved the physical competence of children, and Shin and Duc (2017) demonstrated the effectiveness of a home-based intervention programme in improving motor skills in children with developmental delays in Vietnam. These findings ultimately highlight that existence of a complex and multifaceted association between ECEC and child health, nutrition, and physical development.

5.0 Conclusion

This review aimed to understand the extent of studies on community participation, home-based early childhood education, and indigenous games/play on child outcomes. Stakeholder and community participation in early childhood education is characterized by active engagement, shared responsibility, and empowerment. Community members, including parents and local leaders, play a vital role in early childhood education by contributing time, resources, and labour. Their involvement helps address gaps in infrastructure, nutrition, and personnel, which are particularly significant in resource-limited settings. As a result, there is a growing recognition that early childhood education could be delivered through communal responsibility. This understanding encourages collective efforts among caregivers, parents, and educators, which is essential for fostering children's cognitive and social development. But it also faces challenges that need to be addressed to enhance inclusivity and effectiveness in educational outcomes. Also, the findings emphasize that incorporating an indigenous approach to play-based learning at the early childhood level could significantly contribute to the holistic development of children, encompassing academic physical, cognitive, and social-emotional growth. While enhancing the preservation of cultural heritage since children could connect with their cultural identity and community practices, ensuring cultural continuity. This suggests that adopting local materials and traditional stories, games and play activities not only make learning enjoyable for children but leads to better educational outcomes and underscores the need to leverage this by designing play-based activities that resonate with children's cultural backgrounds. Nevertheless, practitioners often lack the necessary skills and resources to effectively integrate play pedagogies into their teaching, implying the need for educators and facilitators to receive adequate training in the implementation of traditionally informed play-based pedagogies for community-driven ECCE education. Furthermore, existing studies substantiate the benefits associated with centre- and home-based early childhood education interventions. Children enrolled in either or both types of ECCE care predominantly experience holistic and growth and outcomes including literacy, numeracy, social, emotional, psychological and cultural improvements. Although there has been extensive research conducted globally, a limited number of these studies have focused on sub-Saharan African countries, particularly Ghana. This necessitates further studies that address these important lacunae in the literature on inclusive community or home-based early childhood education interventions.



5.1 Limitations

This review has several limitations that needs to be acknowledged. First, there is the possibility of bias to occur because the literature search was limited to peer-reviewed publications in Scopus, and on Goggle database, and omitted grey literature such as working papers, reports, releases, government documents, and thesis. Hence, though there may be important literature published in these sources on the topic they could be possibly excluded. Second, the search was limited to a 19-year period (from 2006 to 2024), thus excluding earlier publications and information on the topic that may be important to this review; however, research have been extensively identified and reviewed to offer a comprehensive report on empirical findings on stakeholder/community participation, centre- and home-based early childhood education.



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