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Innovative Pedagogies for Reimagining Teaching and learning in Early Childhood Education

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Abstract
The aim of this paper is a scholarly examination of the innovative pedagogies for reimagining teaching and learning in Early Childhood Education. The paper adopted a qualitative design where different scholars' opinions describe differences among these pedagogies, identify their advantages and challenges, and consider implications for teaching, curriculum, assessment, professional development, and policy. Through these opinions, the paper argues that while each approach has unique characteristics and peculiarities for children's learning, successful implementation depends on teacher capacity, adequate and available resources, contextual adaptation, and policy formulations. Based on these diverse views, the following recommendations for policy formulation, implementation and practice are: continuous training should be provided to equip early childhood teachers with the pedagogical and technological competencies required to implement innovative teaching effectively; curriculum planners and teachers should integrate children's cultural backgrounds, languages, and lived experiences into teaching and learning processes, among others.

Keywords: innovative pedagogies, reimagining, teaching/learning, Early childhood education

Introduction
Presently, great changes in every area of life have been discovered. These changes are necessitated due to rapid technological advancements, unstable socio-economic changes, and great deviations from normal occurrences, among others. These changes according to UNESCO (2021) gave prominence to acquisition of skills such as creativity, critical thinking, collaboration, and communication, among others, which are essential in the upgrade and transformation of traditional pedagogical practices, especially in Early Childhood Education (ECE), where the foundation for lifelong learning is laid.

Globally, education is the hub for human advancement and development. Along with other areas, education is experiencing a rapid transformation, marking a significant change in teaching and learning methodologies. Traditional classrooms, once dominated by teacher-centered approaches and fixed

instructional techniques, are experiencing a notable transformation towards dynamic and learner-centered learning environments.

As one major arm of the education system, early childhood education is a critical stage in children's development, laying the foundation for lifelong learning and progress. UNESCO (2021) and Emenike (2025a) affirmed that the early childhood period as a key period that lays the foundation for cognitive, social, and emotional development. Apart from natural endowments assembled through genes and genetics, the next differentiating factor among children is engendered by the type of foundation laid in the early years. Reimagining Early childhood education (ECE) becomes an anticipated development not only for quality teaching and learning but also for laying a solid foundation for all children as unavoidable for individual and national development. This is to match the undergoing rapid change and existing realities as modern society emphasizes creativity, critical thinking, collaboration, communication, and digital literacy skills required for survival and development. These skills are acquired through integration of innovative pedagogies inside early childhood environments that lay foundations for teaching and learning.

Innovative pedagogies have emerged as a major stride of modern education that foster critical thinking, creativity, and problem-solving skills among learners. Innovative pedagogies in ECE tend toward child-centered, inquiry-based, and play-infused methods that recognize children as active participants during teaching/ learning activities. Inclusion of such new pedagogies is inevitable for reimagining and repositioning of ECE in readiness for its position of laying the foundation for lifelong learning, individual and national development. This paper examines innovative Pedagogies for Reimagining Teaching and learning in Early Childhood Education.

Conceptual Clarification

Innovative Pedagogies

Pedagogy is at the core of teaching and learning. Emenike (2025b) states that pedagogy focuses on how information and skills are transmitted in a learning environment and how learners interact with them. In a simple and precise way, it is frequently referred to as the act of teaching. According to Sanwal (n.d), it is a method of transacting a theme or conducting an activity to make every learner learn in a stress-free environment. Relevant pedagogy in ECE must be based on holistic perspective, taking into account the various domains of development, the characteristics of children at each age and their learning needs in terms of experiences.

Due to innumerable changes, rapid technological advancements, and ever-evolving educational models, present ECE classroom is expected to be a dynamic environment where pupils and teachers interact with a variety of digital tools through the media of innovative pedagogies, technological devices and diverse

resources that take care of varying individual learning styles and needs (Chandraja et al, 2024).

The term "innovative pedagogies, according to the Learning Generation (2022), refers to teaching-learning methods that move away from traditional didactic or rote methods to support open, exploratory, integrated, and learner-centred practices. Sanwal (n.d) opined that it is the process of proactively introducing new teaching strategies and methods into the classroom to improve academic outcomes and address real problems to promote equitable learning. The emphasis is the shift to learner-centred and flexibility of teaching and learning or departure from the traditional, teacher-dominated methods to actively engage learners in meaningful knowledge construction. The reason is not only to adapt to changes but mainly based on the characteristics and nature of the classroom that has pupils who have the following characteristics, namely: individual needs and interests; different educational backgrounds; different attention spans; different language abilities; different cultural background among others (Sanwal, n.d)

Currently, pedagogies that support cognitive, social, physical, and emotional development are promoted and supported with technology integration in teaching/learning activities. With increasing digitalization, early childhood settings are integrating digital media, tablets, recording devices, and multimodal tools into teaching and learning. Digital and Technology-Enhanced Learning promotes digital literacy, fine motor skills, and engagement, as Neumann (2018) observed. These interactive tools make personalized learning possible.

Some of the innovative pedagogies identified encompass: Play-Based Learning (PBL), Inquiry-Based Learning (IBL), Collaborative and Culturally Responsive Pedagogies, Technology-Enhanced and Blended Pedagogies. In Early Childhood Education (ECE), Edwards (2017) established that innovative pedagogies emphasize play, inquiry, collaboration, creativity, and the integration of real-life experiences to support holistic child development. The application of these pedagogies in ECE prepares the child for effective participation in the development of society.

The need for innovative pedagogical practices that take care of the holistic education and development of children is essential and relevant for a solid foundation in the early years. Gordon, Olsson, and Brante (2021) noted that quality early education can significantly influence future academic achievements, social outcomes, and general performance later in life. The importance of innovative pedagogies in ECE is discovered in their capacity to respond to the developmental needs and interests of individual children while fostering critical thinking, problem-solving, communication, and social skills essential for the present advancements (Darling-Hammond et al., 2020).

Innovative pedagogies in ECE classrooms are realized through approaches such as play-based learning, inquiry-based learning, the purposeful use of digital technologies, and others. These pedagogies create inclusive and stimulating learning environments that respect individual children's differences, needs, and

interests and promote exploration, creativity, and curiosity (Nolan & Paatsch, 2018). Further, these approaches support culturally responsive teaching by recognizing individual children's backgrounds, languages, and experiences in the learning process.

Early Childhood Education

Early Childhood Education is globally accepted as education for children in the early years. FRN (2014) stated that it is the education provided in an educational institution to children before they enter primary school. This education is to an extent unique due to the characteristics and nature of the child that is critical and marked by fast cognitive, social, emotional, and physical development. This status is fortified through the organized provision of learning experiences for children from birth to approximately six years. Bredekamp & Copple (2009) gave credence to the thorough organization of learning experiences because at this stage, learning is most effective when it is developmentally appropriate, play-based, and responsive to children's interests and lived experiences.

The significance of Early Childhood Education is built on its intense influence on children's total development and future educational outcomes. The holistic development of children that aligns with the nature of the child is, by extension engendered through organized experiences which are unique and peculiar to children. Early childhood education requires that children are provided learning/developmental opportunities and experiences that lead to their all-round development: physical, mental, social, and emotional, and school readiness (National Council of Educational Research and Training, 2021).

A holistic and integrated needs of children that are integrally related to their psychosocial/educational development are expected outcomes of ECE. Quality ECE for Heckman (2011) supports the language development, early literacy and numeracy, social competence, self-regulation, and problem-solving skills, while also fostering positive attitudes toward learning. Early Childhood Education is purposefully for nurturing capable, curious, and confident learners by significantly contributing to the development of lifelong learners equipped to succeed in a rapidly changing world (Darling-Hammond et al., 2020). This education helps children to do well in their education and later in life. Also, it supports giving children suitable chances to grow and builds a desire in them to construct new knowledge and experiences.

Reimagining Early Childhood Education

Reimagining literally means 'the action or an act of imagining something again, a reconstruction; a remake' (Oxford English Dictionary). It is giving a new shape to something familiar and thinking about it in a new, different, or more creative way to get better results, shape, dimensions, perspectives, improvements, or entirely new versions. In ECE, it encompasses a transformative reorientation of

teaching and learning practices to align with the needs, interest and appropriate developmental domains of children in alliance with the demands of society.

In reimagining ECE, Edwards (2017) opined that child-centred, play-based, and inquiry-driven learning experiences that support holistic development across cognitive, social, emotional, and physical domains are emphasized. The advocacy is deviating away from rigid traditional instructional models to a dynamic process that values exploration, creativity, and active participation. (OECD, 2019) noted that reimagining early childhood education provides a strong foundation for lifelong learning by aligning early educational practices with global educational goals and emerging pedagogical innovations.

Reimagining Early Childhood Education through Innovative Technologies

Innovative pedagogies play a critical role in reimagining teaching and learning in early childhood education by aligning instructional practices with contemporary educational goals, global competencies, and the evolving needs of young learners in a rapidly changing world (OECD, 2019). Reimagining ECE requires a deliberate shift among teachers and other stakeholders, supported by policy reforms, teacher capacity-building, and culturally responsive practices. The transformation of teaching approaches at the early childhood level is not only a pedagogical imperative but also a strategic investment in the nation's human capital development. UNICEF (2022) underscores the critical role of innovative pedagogies in reimagining ECE, improving learning outcomes, and ensuring equity and inclusion in early childhood education.

Innovative pedagogical approaches enhance the quality of early learning by fostering critical thinking, collaboration, communication, and problem-solving skills from an early age. Darling-Hammond et al. (2020) buttressed that the integration of play-based, inquiry-based, and experiential learning strategies in ECE creates profound learning environments that promote curiosity, autonomy, and deeper understanding. These approaches are grounded in modern learning theories that view children as active participants in knowledge construction rather than passive recipients of information (Edwards, 2017).

Reimagining ECE through innovative pedagogies enables the effective integration of digital tools and real-world experiences to support exploration and creativity without undermining developmentally appropriate practice (OECD, 2019).

Play-Based Learning

Play is the major function of the child that is important for learning, social interaction, language acquisition, and holistic development. It aligns with children's nature and love for fun full life and activities. Play-based learning recognizes that children are naturally curious and learn best through hands-on exploration and discovery. It places play as the most important channel through

which children engage with their environment, experiment with materials, exchange social roles, and create individual and peculiar meaning. According to Brightwheel (2025), play-based learning is an educational approach that incorporates play as a dominant component of the learning process. It recognizes that children learn effectively through active engagement and exploration of the environment in a meaningful and fun context. As children play, they engage their imagination, take risks, and learn problem-solving skills to support their development.

In the ECE classroom, play-based learning can take various forms. It could involve setting up hands-on sensory activities, where children can experiment and discover new textures and properties; it could also involve imaginative play with dress-up clothes or pretend kitchens, allowing children to explore different roles and scenes while developing their language and social skills.

From the perspectives of free play that is child-initiated and teacher-supported, free play is often directed by the children themselves, without interference from any adult. This allows the child to play according to how the child wants. The role of the teacher and other adults is to support the child during such play; observe and take records of the achievements, development, and attainments during play. This is in contrast to guided play and is wealthier in attainment outcomes for children. Guided play, for Fisher et.al. (2013), is play that has some level of teacher guidance or involvement. The teacher's role is to motivate and encourage the children to learn through interactions that expand their thinking.

The place of either free or guided play in teaching-learning exercises and overall development of the child is not only significant, but amazing and tremendous. Children play supports holistic development that includes cognitive, social, emotional, and physical development. This is possible because, in play, all the faculties of the child and the different areas of development are fully involved and engaged. Children enjoy playing a lot, not only because it is recognized as the main duty of the child, but also because it is also fun and, above all, it is one main means of dispersing excess energy. Every normal child has excess energy that must be dissipated for the child to remain healthy and normal. In addition, the usage of play for teaching-learning activities to a great extent eases the burden of teaching children and enhances the learning and development of children. Ridgway, Quiñones, and Li (2015) stated that play pedagogies emphasize child initiative, inquisitive, exploratory interactions, and adult scaffolding rather than direct instruction.

Inquiry-Based Learning as an Innovative Pedagogy in ECE

Inquiry-Based Learning (IBL) is an innovative pedagogy that is learner-centred, positions children as active explorers of their environment, encouraging them to ask questions, investigate phenomena, and develop awareness through inquisitiveness and exploration. In Early Childhood Education (ECE), inquiry-

based learning is anchored in constructivist theories of learning, particularly the works of Piaget and Vygotsky, which emphasize learning as an active and socially mediated process (Piaget, 1952; Vygotsky, 1978). Rather than transferring common knowledge, teachers using IBL expedite learning by guiding children's curiosity and supporting their natural inclination to explore and make sense of the world. Socrates, in his Socratic method, popularized inquiry-based learning by using questions to elicit new knowledge from his students.

The significance of inquiry-based learning in ECE lies in its capacity to nurture critical thinking, problem-solving, creativity, and communication skills from an early age. In inquiry-based learning, children engage in observing, predicting, experimenting, and reflecting, which are processes that align with how children naturally learn during the early years (Hmelo-Silver, Duncan, & Chinn, 2007). This approach instills confidence and promotes deeper understanding as new experiences are connected with prior knowledge while developing autonomy in the learning.

Inquiry-based learning in early childhood environments starts with children's questions demanding answers in areas of interest not clear to them, such as to know and understand why one is fat, shot, etc., how objects move, or what happens when materials change among others. Teachers' role in IBL is that of a facilitator and co-learner who supports learning, documents children's thinking, and extends inquiry through thoughtful prompts and reflections (Edwards, 2017). This responsive interaction ensures that learning remains developmentally appropriate while intellectually stimulating. The teacher needs to be grounded and equipped through training to get appropriate results with this approach.

Inquiry-based learning also supports inclusive and culturally responsive education by valuing children's diverse perspectives, experiences, and ways of knowing. Darling-Hammond et al., (2020) noted that in encouraging dialogue, collaboration, and shared problem-solving, IBL fosters social interaction and respect for others' views that may be at variance with an individual child's view, which are essential for social and emotional development in early childhood.

Inquiry-based learning (IBL) incites children to ask questions, explore phenomena, examine ideas, ponder, and develop insights. According to Nhase and Dube (2023), it is closely related to scientific thinking and problem-solving even in early years, especially when such inquiry is based on children's interests. IBL goes beyond gaining factual knowledge to providing environments where children investigate, collaborate, and reason. This method supports that children are capable of reasoning even at early years. The ability and capacity to think invigorates the creation of children's worlds that are often bound, distinct from the adult world and imagination.

Collaborative and Culturally Responsive Pedagogy

Collaborative and culturally responsive pedagogy represent learner-centred instructional approach that emphasizes shared knowledge, social

interaction, and respect for learners' cultural identities and local experiences. Children interact and relate anywhere they come together without consideration of their differences. According to The Learning Generation (2022), this pedagogy emphasizes social learning (children working together, sharing, negotiating), as well as embedding children's cultural backgrounds, languages, and experiences into curriculum and pedagogy.

Equality and equity are fundamentals among the characteristics of the child. Everywhere a child finds another child becomes a place to relate and socialize freely. Collaborative pedagogy is anchored in sociocultural theories of learning, which maintain that children learn best through interaction with peers, teachers, families, and the wider community (Vygotsky, 1978). Culturally responsive pedagogy, on the other hand, intentionally incorporates learners' cultural backgrounds, languages, values, and community resources into teaching and learning processes, thereby making education more relevant and meaningful to children (Gay, 2018). This provides children with the environment and resources they are familiar with, available, and affordable. Using these familiar resources that are cultural bond quickens learning, usage, and functionalities. Cultural sensitivity is imperative in promoting teaching and learning at an early stage. It is not that "A" is for apple in the culture that "Apple" is alien, with little or no relevance.

The importance of collaborative and culturally responsive pedagogies in Early Childhood Education (ECE) is discovered in their capacity to promote equity, inclusion, and social cohesion while supporting holistic child development. Ladson-Billings (1995) stated that early learning environments are increasingly diverse, and that pedagogies that affirm children's identities contribute positively to their sense of belonging, self-esteem, and academic engagement. Through collaboration, Rogoff (2003) averred that children develop essential social skills encompassing communication, cooperation, empathy, and conflict resolution, which are foundational for lifelong learning and social cohession. When collaboration is combined with cultural responsiveness, learning experiences become more inclusive and supportive of diverse ways of knowing and learning.

Collaborative and culturally responsive pedagogies are applied through group-based learning activities, peer interactions, shared problem-solving tasks, and community-based projects. Teachers in ECE as Gillies (2016) rightly stated, promote learning by creating opportunities for children to work together, share ideas, and learn from one another within supportive and inclusive classroom environments. Culturally responsive practices include the use of culturally relevant stories, songs, games, and learning materials, as well as the incorporation of children's mother tongue or language of the immediate environment (Emenike, 2019) and cultural practices into daily classroom routines (Gay, 2018).

Furthermore, collaborative and culturally integrated pedagogy supports differentiated instruction by recognizing individual differences in learning styles,

abilities, and cultural contexts. Banks (2016) observed that teachers, due to these variations, adopt flexible teaching strategies that accommodate diverse learners and promote equitable participation in learning activities. In early childhood settings, such pedagogies encourage inquiry, dialogue, and shared meaning-making, enabling children to connect new knowledge with prior experiences and cultural understandings.

Technology-Enhanced and Blended Technologies

Pedagogies enhanced through technology in modern times, in a technology-driven age is inevitable for an adequate foundation in ECE. Technology-enhanced learning according to Graham, (2013) includes the use of digital tools such as tablets, interactive whiteboards, educational applications, digital storytelling platforms, and assistive technologies, while blended pedagogy combines in-person learning with guided digital experiences in a balanced manner.

The integration of digital technologies in education improve teaching-learning experiences. Digital storytelling, for instance, combines traditional storytelling with digital media, stimulates creativity and engagement among children. This approach, according to Hinostroza (2018) promote the increase of literacy skills and also enhances cognitive and social-emotional learning. Also, the use of gamification and e-learning in early childhood settings, as Aldhilan, Rafiq, and Afzal (2024) affirmed, has been shown to improve engagement and motivation, providing a playful yet educational diverse environment. Again, the use of botSTEM technology in ECE integrates robotics into early childhood education, making abstract concepts concrete and easily comprehensible for children.

The importance of technology-enhanced and blended pedagogies in ECE support early digital literacy, personalize learning, and extend learning beyond the classroom. When properly integrated, technology enhances children's cognitive, language, and socio-emotional development through the provision of multimodal learning opportunities that cater for diverse learning styles and abilities (Hirsh-Pasek et al., 2021). These pedagogies also prepare children for quality participation in an increasingly digital world through promoting foundational skills like problem-solving, communication, creativity, and responsible technology use (OECD, 2021). Technology-enhanced and blended pedagogies contribute to inclusive education that support children with diverse learning needs through assistive and adaptive technologies. These tools, as Alper and Raharinirina (2006) stated, can enhance accessibility, support communication, and promote active participation for children with disabilities or developmental delays.

Challenges Inhibiting Innovative Pedagogies in Early Childhood Education

Innovative pedagogies are undermined by several challenges. These inhibiting factors have been widely reported in both global and local literature (Onen & Ayiorwoth, 2025). At the global level, teacher education, financial limitations, and institutional resistance have emerged as key issues inhibiting the adoption of child-centred teaching. Nwagbara (2019) remarked that despite the global recognition of innovative pedagogies, Nigerian education remains constrained by structural challenges such as teacher resistance, lack of professional training, and poor infrastructure.

One major constraint identified by Darling-Hammond et al. (2020) is inadequate teacher preparation and limited professional development opportunities. Many teachers at the ECE level lack sufficient training required in child-centred, technology-enhanced, and inquiry-based pedagogical approaches, which affects their competence in applying innovative practices in classroom settings. Closed monitored observation reveals that many teachers in ECE are not trained-teachers in the area. A nation's capacity to thrive within the current knowledge-driven era hinges on having a population that is properly educated (Ogunode, Johnson, & Olatunde-Aiyedun, 2022), and this background is established at the ECE stage through its practical implementation of innovative pedagogies.

Another significant challenge is the lack of adequate infrastructure and learning resources. Innovative pedagogies' integration in the classroom environments demand infrastructures and resources to get desired results. Innovative pedagogies require flexible classroom spaces, age-appropriate learning materials, and access to digital technologies, among others. In many early childhood settings, classrooms are overcrowded and poorly equipped (Emenike, 2022), making it difficult to implement play-based, collaborations, and technology-enhanced learning approaches (UNESCO, 2017). Also, limited access to reliable electricity, internet connectivity, and digital devices further constrains the use of some innovative pedagogies that have to do with technology-enhanced and blended technologies.

Curriculum rigidity also inhibits innovative pedagogies in ECE. It is common that curricula prioritize content coverage and rote learning over creativity, exploration, and experiential learning. Such approach discourages teachers from going contrary to the normal practice of strict compliance to contents coverage and never experimenting with innovative pedagogies that emphasize process-oriented learning, critical thinking, and holistic child development (OECD, 2019). The pressure to achieve stated learning outcomes within a limited time frame also often restricts the flexibility required for child-centered and inquiry-based learning experiences, which takes a lot of time to achieve results.

In addition, socio-cultural and institutional factors play a critical role in inhibiting the adoption of innovative pedagogies. Some parents, teachers, and school administrators often do not support any new inclusion because of so many

fears and worries. They insist on traditional views of teaching and learning, equating effective education with direct instruction and measurable academic outcomes to avert any involvement. This view leads to resistance against play-based, collaborative, and culturally responsive pedagogies, which may be misunderstood as less rigorous or ineffective (Edwards, 2017).

The issues of equity and inclusion also is another challenge to the integration of innovative pedagogies. Children from marginalized backgrounds, including those affected by poverty, disability, language barriers, or conflict, often have limited access to quality early learning environments that support innovative practices. Without targeted policy interventions and resource allocation as Banks (2016) rightly noted, innovative pedagogies risk benefiting only a small segment of the population, thereby widening existing educational inequalities.

Above all, funding is one of the major systemic barriers in education. Lucky (2024) admitted that one of the major problems of education in Nigeria for sustainable development is funding. For over a decade, a paltry fraction of 5-7 percent of the total budget was allocated to education, as against the United Nations recommendation of at least 26 percent of the annual budget of any nation to education (Ebi & Ubi, 2017)). Nigeria despite being a member of UNESCO, allocates persistently below, 6% of her budget to education since the UNESCO Declaration in 1990. A significant challenge in financing education within Nigeria stems from the government's established regulations (Sani & Oluwasanumi, 2013), along with a deficiency in both dedication and genuine concern. Currently, there is an unprecedented increase in children's enrollment/population, without a corresponding increase in the budgetary allocation.

Strategies to Foster the Integration of Innovative Pedagogies in Early Childhood Education

The integration of innovative pedagogies in Early Childhood Education (ECE) requires systemic and context-sensitive strategies that address pedagogical, institutional, and socio-cultural dimensions of teaching and learning. At the centre is sustained professional development for teachers in early childhood education. Teachers development according to Darling-Hammond et al., (2020) requires continuous training programmes that focus on child-centred, play-based, inquiry-driven, culturally responsive, and technology-enhanced pedagogies to help teachers to build the knowledge, skills, and confidence necessary to implement innovative practices effectively.

Next of great relevance and relation is curriculum flexibility and reform. This plays a critical role in fostering innovative pedagogies in ECE. Curricula that emphasize developmental appropriateness, holistic learning outcomes, and experiential learning create opportunities for teachers to adopt creative and learner-driven instructional approaches. Integrating inquiry related activities and interdisciplinary themes allows children to explore concepts meaningfully while supporting cognitive, social, emotional, and physical development (OECD, 2019).

Another key strategy involves creating enabling learning environments that support innovation. Well-designed early learning spaces that are flexible, having adequate resources, and inclusivity encourage exploration, collaboration, and play among children. The provision of age-appropriate learning materials, digital tools, and assistive technologies, as UNESCO (2017) noted, enhance access and participation for all learners, including children with diverse needs. Purposeful integration of technology that is guided by developmental principles supports creativity, communication, and early digital literacy.

Policy support and institutional leadership further influence the successful adoption of innovative pedagogies in ECE. Governments must prioritize early childhood education through adequate funding, supportive policies, and quality assurance strategies that encourage innovation rather than compliance with rigid instructional models (UNESCO, 2021).

Theoretical Framework

This paper is anchored on Everett Rogers' Theory of Diffusion of Innovations (Rogers, 2003), which provides a sound foundation for understanding how new practices and ideas are adopted or rejected within a social system. According to the theory, the adoption of innovation goes through five distinct phase that includes: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003).

In the context of this paper, an innovative pedagogical approach promotes teaching and learning activities in ECE. The successful application of these pedagogies follows the pathway highlighted through Rogers' five stages.

- Teachers being exposed to innovative pedagogies is part of the knowledge stage.
- Teachers' attitudes and beliefs about the benefits of adopting these new pedagogies in the persuasion stage.
- Teachers decide whether to adopt or not to adopt innovative pedagogies during the decision stage,
- Apply innovative pedagogies in the classroom activities.
- Teachers seek affirmation of their choices and assess the outcome of the innovation.

This theory offers a more comprehensive explanation for the differences in outcomes from the application of innovative pedagogies in ECE. Though many teachers possess knowledge of innovative pedagogies, only a few incorporate them in their teaching. In applying the theory, we sought to identify the multi-level barriers to adopting innovative pedagogy and the major conditions that would facilitate effective implementation in the classroom.

Discussion of Opinions

Reimagining Early Childhood Education (ECE) century has generated scholarly debate, particularly around how innovative technologies can be integrated with appropriate innovative pedagogies. Central to these discussions is

the acceptable view that technology should not replace play, human relationships, but rather enhance pedagogical practices such as play-based learning, inquiry-based learning, collaborative and culturally responsive pedagogy, as well as technology-enhanced and blended pedagogies (Edwards, 2016; Pyle & Danniels, 2017). This is in agreement with the major characteristics of children in early years, that is, play-related and love for nature. Elliott and Chancellor (2014) agree that outdoor and Nature-Based Learning promote physical development, creativity, and environmental awareness. This, to a very large extent, supports mental well-being and resilience in children. Also, Biers (2018) confirmed that digital storytelling, programmable toys, and interactive simulations are increasingly viewed as tools that enrich imaginative play and symbolic thinking rather than diminish them. Hirsh-Pasek et al. (2021) insist that technology-integrated play supports creativity, early problem-solving skills, and emergent digital literacy, all of which are essential competencies in contemporary society. Pyle and Danniels (2017) accept that play enhances cognitive, social, and emotional development through active engagement. Language learning and the ability to manage oneself are also supported by it (Bodrova & Leong, 2015). Edwards (2016), however, warns that using technology too much or without good direction could hurt the ability to act on one's own and social negotiation inherent in free play, emphasizing the need for intentional moderation by teachers.

Similarly, ECE can be reimagined through the use of innovative technologies that allow children to explore and ask questions. Pedaste et al. (2015), in agreement, identified digital microscopes, tablets, and simple data-collection tools that support children's natural curiosity by enabling observation, experimentation, and reflection. Neumann (2018) affirmed that technology-enhanced inquiry strengthens higher-order thinking and metacognitive skills even at early ages. On the contrary, Plowman and Stephen (2018), in an opposing view, highlight challenges related to teacher preparedness, access to resources, and the risk of inquiry becoming overly structured or teacher-directed when mediated through technology. Though IBL encourages curiosity, scientific thinking, and enhances problem-solving and independent thinking, Pedaste et al. (2015) are of the view that one principal factor militating against this method is that it requires more planning and classroom management skills in order to get desired and expected results.

Personalized learning is relevant and meaningful, taking into cognizance the unique surroundings of the child. The child develops within a given environment and is expected to acquiesce to the cultural values, norms, and goals. Culturally Responsive Pedagogy provides learning that is bound within the culture of the learner. These pedagogies emphasize social learning (children working together, sharing, negotiating), as well as embedding children's cultural backgrounds, languages, and experiences into the curriculum and pedagogy. This is achieved through integrating with local materials and resources in the learning process. In agreement, Gay (2018) and The Learning Generation (2022) attested

that such pedagogy promotes inclusiveness and supports identity development that strengthens relationships, equality, and equity. Gay (2018) agrees that it allows the inclusion of local languages, cultural stories, music, and visual representations that affirm children's identities, and this promotes equity among children. This aligns with Vygotsky (1978) that collaborative digital projects foster social interaction, peer learning, and shared meaning-making, aligning with sociocultural theories of learning. However, Lim & Smith (2021) warn that culturally responsive technology integration requires deep cultural competence; without it, digital content may reinforce stereotypes or marginalize local knowledge systems.

Various views surrounding technology-enhanced and blended pedagogies in ECE focus on balancing innovation with developmental appropriateness. OECD (2020) accepts and emphasizes that blended approaches offer flexibility, personalization, and continuity of learning across school and home environments. UNESCO (2023) also admits that technology is increasingly viewed as a pedagogical amplifier that supports differentiated instruction and inclusive practices, particularly for children with diverse learning needs. Conversely, Plowman (2016) raises concerns about screen time, inequitable access to digital resources, and the commercialization of early learning technologies, as these issues may widen educational disparities if not carefully addressed.

Conclusion

Innovative pedagogies are essential for reimagining Early Childhood Education. These technologies can reimagine teaching and learning in Early Childhood Education (ECE) by placing the child at the centre of the learning process. Pedagogies such as play-based learning, inquiry-based learning, collaborative and culturally responsive pedagogy, and technology-enhanced and blended pedagogies were highlighted as powerful strategies for fostering holistic development, creativity, and lifelong learning skills in children. These pedagogies align with contemporary educational demands while remaining grounded in developmental appropriateness and sociocultural contexts. However, systemic challenges such as inadequate teacher training, insufficient infrastructure, and policy limitations must be addressed to facilitate widespread adoption. The effectiveness of these technologies depend largely on teacher competence, supportive learning environments, and equitable access to resources.

Recommendations

The following recommendations made are:

1. Continuous training should be provided to equip early childhood educators with the pedagogical and technological competencies required to implement innovative teaching effectively.
2. Curriculum planners and teachers should intentionally integrate children's cultural backgrounds, languages, and lived experiences into teaching and learning processes.

3. Governments and stakeholders should ensure equitable provision of age-appropriate materials, digital tools, and safe learning environments, particularly in under-resourced settings.
4. Early childhood classrooms should be designed to promote peer interaction, teamwork, and social learning as foundations for cognitive and emotional development
5. Educational policies should explicitly support innovative pedagogies in ECE through funding, appropriate curriculum, and monitoring mechanisms that promote quality and sustainability.

References

Aldhilan, D., Rafiq, S., & Afzal, A. (2024). Enhancing Early Childhood Education in Saudi Arabia: Utilizing Gamification for Engaging and Effective Learning. *Gomal University Journal of Research*, 40(1), 21-35.

Alper, S., & Raharinirina, S. (2006). Assistive technology for individuals with disabilities: A review and synthesis of the literature. *Journal of Special Education Technology, 21*(2), 47–64.

Banks, J. A. (2016). *Cultural diversity and education: Foundations, curriculum, and teaching* (6th ed.). Routledge.

Beirs, M. U. (2018). *Coding as a playground: Programming and computational thinking in the early childhood classroom*. Routledge.

Bodrova, E., & Leong, D. J. (2015). Vygotskian and post-Vygotskian views on children's play. *American Journal of Play*, 7(3), 371–388.

Brightwheel (2025). What is Play-Based Learning? Retrieved from: https://mybrightwheel.com/blog/what-is-play-based-learning

Bredekamp, S., & Copple, C. (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8* (3rd ed.). National Association for the Education of Young Children.

Chandraja, C. V., Ajayan, T., Ruskin, S. & George, M. (2024). Innovative Pedagogies: Adapting Teaching strategies for Modern Learning Environments. https://www.researchgate.net/publication/383195363_innovative_pedagogies_adapting_teaching_strategies_for_modern_learning_environments [Assessed January 21, 2026].

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140.

Ebi, B. O., & Ubi, P. S. (2017). Education Expenditure and Access to Education: Case Study of United Nations Educational, Scientific and Cultural Organization Declaration in Nigeria. *International Journal of Economics and Financial Issues*, 7(5), 290-298

Edwards, S. (2016). New concepts of the digital age: Implications for learning and teaching in early childhood. *Australasian Journal of Early Childhood*, 41(4), 5–12.

Edwards, S. (2017). Play-based learning and intentional teaching: Forever different? *Australasian Journal of Early Childhood, 42*(2), 4–11.

Emenike, J. A. (2025b). *Practicum: A guide to the Student-Teacher and Professional Teachers*. Usmanu Danfodiyo University, Sokoto

Emenike, J. A. (2025a). Access, Equity and Inclusion in Early Childhood Education. *A Chapter Contribution in The State of Education*. In Press

Emenike, J. A. (2022). *Interest, Classroom Environment as Correlates of Pupils Academic Achievement in Abia State.* An unpublished Ph.D Thesis at the Faculty of Education, University of Nigeria, Nsukka.

Emenike, J. A., Ngwoke, A. N. & Njoku, O.C. (2019). Mother-Tongue Based (MTB) Schooling: A Key for Transforming Early Childhood Education for Future Generation in Nigeria. *IISTE Journal of Education and Practice*, 10, (23), 76- 83.

Elliott, S., & Chancellor, B. (2014). From forest preschool to Bush Kinder: An inspirational approach to preschool provision in Australia. *Australasian Journal of Early Childhood*, 39(4), 45–53.

Fisher, K. R., Hirsh-Pasek, K., Newcombe, N., & Golinkoff, R. M. (2013). Taking shape: Supporting preschoolers' acquisition of geometric knowledge through guided play. *Child Development*, 84(6):1872-1878.

Gay, G. (2022). Culturally responsive teaching: Theory, research, and practice. Teachers College Press.

Gordon, J., Olsson, L., & Brante, G. (2021). The role of early childhood education in promoting lifelong learning: A comprehensive review. *Early Years*, 41(4), 415-431.

Gillies, R. M. (2016). Cooperative learning: Review of research and practice. *Australian Journal of Teacher Education, 41*(3), 39–54.

Graham, C. R. (2013). Emerging practice and research in blended learning. In M. G. Moore (Ed.), *Handbook of distance education* (3rd ed., pp. 333–350). Routledge.

Heckman, J. J. (2011). The economics of inequality: The value of early childhood education. *American Educator, 35*(1), 31–35.

Hirsh, K., Zosh, J. M., Golinkoff, R. M., Gray, J. H., & Kaufman, J. (2021). Putting education in "educational" apps: Lessons from the science of learning. *Psychological Science in the Public Interest*, 22(1), 3-34.

Hmelo-Silver, C. E., Duncan, R. G., & Chinn, C. A. (2007). Scaffolding and achievement in problem-based and inquiry learning: A response to Kirschner, Sweller, and Clark. *Educational Psychologist, 42*(2), 99–107.

Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal, 32*(3), 465–491.

Lim, M., & Smith, J. (2021). Digital equity and culturally responsive pedagogy in early childhood education. *Early Childhood Research Quarterly*, 56, 1–11.

Lucky, U. A. (2024). Challenges of Inadequate Funding in the Administration of University Education in Nigeria. *Research Invention Journal of Current Research in Humanities and Social Sciences* 3(1):32-40

National Council of Educaional Research and Training (2021). *Early Childhood Education: An Introduction.* New Delhi: NCERT Campus

Neumann, M. M. (2018). Using tablets and apps to enhance emergent literacy skills in young children. *Early Childhood Education Journal*, 46(6), 703–713.

Nolan, A., & Paatsch, L. (2018). *Teaching and learning in early childhood education*. Oxford University Press.

Nwagbara, C. (2019). Challenges and prospects of early childhood education in Nigeria. *International Journal of Educational Research and Development*, 8(3), 45–53.

OECD (2019). *Future of education and skills 2030: OECD learning compass 2030*. OECD Publishing.

Ogunode, N. J, Johnson, A. G & Olatunde-Aiyedun, T.G. (2022) Education Crisis in Nigeria and Way Forward. *Kresna Social Science and Humanities Research Proceedings of the International Conference on Sustainable Development: Problems, Analysis and Prospects.*33-47

Onen, D. & Ayiorwoth, H. (2025). Barriers to Adopting Innovative Teaching Methods in Private Secondary Schools in Gulu City: Implications for Curriculum, *Journal of Curriculum Development, Evaluation and Education,* 1 (2), 1-19

Pedaste, M., Mäeots, M., Siiman, L. A., de Jong, T., van Riesen, S. A., Kamp, E. T., Manoli, C. C., Zacharia, Z. C., & Tsourlidaki, E. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review*, 14, 47–61.

Piaget, J. (1952). *The origins of intelligence in children*. International Universities Press.

Plowman, L. (2016). Rethinking context: Digital technologies and children's everyday lives. *Children & Society*, 30(3), 190–202.

Plowman, L., & Stephen, C. (2018). Digital play and learning in the early years. *British Journal of Educational Technology*, 49(2), 191–203.

Pyle, A., & Danniels, E. (2017). A continuum of play-based learning: The role of the teacher. *Early Education and Development*, 28(3), 274–289.

Rafiq, S., Kamran, F., & Afzal, A. (2023). Enhancing professional motivation in the early childhood teacher education: Unraveling issues and challenges. *Journal of Social Sciences Development*, 2(1), 26-43.

Rogoff, B. (2003). *The cultural nature of human development*. Oxford University Press.

Sani, A., & Oluwasanumi, A. (2013). *Challenges of Educational Development in Nigeria*. National Institute for Educational Planning and Administration (NIEPA), Ondo.

Sanwal, S. (n.d). Innovative Pedagogy-Definition. https://ncert.nic.in/pdf/shikshak-parv/Prof.%20Suniti%20Sanwal,.pdf. [accessed January 22, 2026].

UNESCO (2015). *Rethinking education: Towards a global common good?* UNESCO Publishing.

UNESCO. (2017). *A guide for ensuring inclusion and equity in education*. UNESCO Publishing.

UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing.

UNESCO. (2023). *Technology in education: A tool on whose terms?* UNESCO Publishing.

UNICEF. (2022). *Early moments matter for every child*. UNICEF. https://www.unicef.org/early-childhood-development

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