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APPLICATION OF PIAGET'S THEORY IN EARLY CHILDHOOD EDUCATION CURRICULUM DEVELOPMENT

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Abstract

The application of Jean Piaget's cognitive development theory in early childhood education curriculum development plays an important role in creating learning programmes that are appropriate to children's developmental stages. Piaget's theory, which identifies sensorimotor, preoperational, concrete operational and formal operational stages, offers guidance for educators to design appropriate educational activities that support children in each stage of development. Learning through direct experience and play activities, in accordance with Piaget's principles, allows children to learn through interaction with their environment, reinforcing understanding and skills naturally. This approach not only makes the learning process more interesting and relevant for children, but also ensures that the concepts taught are appropriate for their cognitive abilities. The implementation of Piaget's theory in the curriculum also emphasises the early development of critical thinking and problem-solving skills, which are important for intellectual development and readiness to face future challenges. Thus, Piaget's theory contributes significantly to shaping a curriculum that is adaptive, child-centred and effective in supporting children's holistic development early in their educational journey.

Keywords: Application, Piaget's Theory, Curriculum Development, Early Childhood Education.

Introduction

Early Childhood Education (ECED) is a crucial stage in a child's development, where the foundations of cognitive, social, emotional, and physical abilities begin to form. Early Childhood Education (ECED) is an educational process designed to develop various aspects of child development from birth to six years of age, in a supportive and loving environment (Hapinas et al., 2025); (Sitopu et al., 2024); (Guna et al., 2024); (Fawait et al., 2024). The main focus of ECD is to provide appropriate stimulation according to children's developmental stages, so that they can optimise their cognitive, physical, social, emotional, and language skills, all of which are important foundations for their future education and life. The goal of PAUD is to create children who are healthy, smart, cheerful, noble, and have a spirit of lifelong learning. Developing an

effective curriculum for ECD requires a deep understanding of children's developmental characteristics. In this context, Jean Piaget's theory of cognitive development offers important insights that are relevant for ECD curriculum development (Ritchie, 2021).

Jean Piaget, a Swiss psychologist, formulated a theory of cognitive development that divides children's intellectual growth into four stages: sensorimotor (0-2 years), preoperational (2-7 years), concrete operational (7-11 years), and formal operational (11 years and above). Each of these stages characterises the unique qualities and thinking abilities of children, which should inform the design of learning activities in ECD (Kemp & Whitcomb, 2023).

However, in practice, many ECD curricula still do not fully integrate the developmental principles proposed by Piaget. Some curricula emphasise academic aspects that are inappropriate for children's developmental stages, which can inhibit children's ability to learn optimally. For example, an excessive focus on teaching literacy and numeracy can cause early childhood to lose opportunities to develop play, exploration and social interaction skills (Indriyani et al., 2024).

In addition, teachers' lack of understanding and training in Piaget's theory and its application in early childhood education is also an inhibiting factor. Teachers often design learning activities that do not reflect the developmental needs of children according to their stages, which ultimately impacts on the effectiveness of the education (Mustakimah, 2023).

Overcoming this problem requires a more in-depth application of Piaget's theory in early childhood curriculum development. By utilising Piaget's ideas on active, exploratory and experiential learning, ECD curriculum development can be more efficient and aligned with children's developmental characteristics. Thus, children will have a strong foundation to develop optimally (Jenkin, 2020); (Iksal et al., 2024); (Syakhrani & Aslan, 2024); (Judijanto et al., 2024).

The importance of discussing the application of Piaget's theory in ECD curriculum development is not only to achieve academic goals, but also to stimulate all aspects of child development. Therefore, this study aims to examine more deeply how Piaget's principles can be applied in the development of an ECD curriculum that is more holistic and in accordance with the characteristics of early childhood development.

Research Methods

The study in this research uses the literature method. Literature research method, also known as literature review, is an approach in which researchers collect, review, and analyse information from relevant written sources to answer research questions or develop a theoretical framework. In this method, researchers identify and evaluate existing literature such as books, scientific journals, articles, reports, and other academic sources to collect secondary data that can support or oppose research hypotheses (Firman, 2018); (Suyitno, 2021). This process involves a systematic literature

search, assessment of the quality and relevance of the sources found, and synthesis of the information obtained to produce a comprehensive understanding of the topic under study. The main objectives of literature research are to identify knowledge gaps, conceptualise the research problem, and provide a strong theoretical foundation that can support further empirical research (Jelahut, 2022).

Results and Discussion

Application of Piaget's Theory in the Early Childhood Curriculum

The application of Piaget's theory in the Early Childhood Education (ECE) curriculum aims to align learning activities with the stages of cognitive development of children, as identified by Jean Piaget. Piaget proposed four stages of cognitive development, namely the sensorimotor stage (0-2 years), preoperational stage (2-7 years), concrete operational stage (7-11 years), and formal operational stage (11 years and above). In the context of early childhood education, the majority of children are in the sensorimotor and preoperational stages so the learning approach should be tailored to the characteristics and developmental needs of these stages (Björklund & Samuelsson, 2022).

In the sensorimotor stage, children learn through direct interaction with their environment using their senses and motor skills. Therefore, an ECD curriculum based on Piaget's theory would include many explorative activities that allow children to feel, touch and manipulate objects around them. Activities such as playing with water, sand, blocks and other manipulative objects can help them build a basic understanding of the physical world and cause-and-effect relationships (Didachou, 2021).

Moving into the preoperational stage, children begin to develop symbolic thinking, language and imaginative play. However, they still have difficulty understanding logical concepts and different perspectives. The ECD curriculum at this stage needs to emphasise activities that stimulate the use of imagination and symbolism, such as role-playing, storytelling, drawing and singing (Ishiguro, 2022). In addition, teachers should provide concrete learning experiences as children at this age are not yet able to think abstractly. For example, using real objects to explain basic maths concepts is more effective than using abstract symbols (Kong, 2022).

Furthermore, Piaget's theory emphasises the importance of constructivism, the belief that children construct their own knowledge through a process of active interaction with their environment. In practice, the ECD curriculum should enable children to be active participants in their own learning process. This can be done by giving them opportunities to investigate, question and solve problems on their own, with support and guidance from teachers who act as facilitators (Hedges, 2020). Activities that encourage children to think critically and reflectively, as well as explore different ways to solve problems, will be very beneficial in this way.

The application of Piaget's theory in the ECD curriculum also underlines the importance of a learning environment that is rich in stimulation and supports children's cognitive development. This includes providing well-organised classrooms with a range of multipurpose learning materials that children can freely access. The classroom environment should invite curiosity and provide space for exploration and experimentation. The teacher's role here is to create conditions conducive for children to learn through direct experience, as well as facilitate a learning process that is flexible and responsive to children's individual interests and needs (Flint, 2021).

Overall, the application of Piaget's theory in the ECD curriculum demands an approach to learning that is based on a deep understanding of how children think and learn at each stage of their development. This requires careful planning of different types of activities that stimulate cognitive development, through learning processes that are active, fun and meaningful to children. By following Piaget's principles, early childhood education can help children build a strong foundation for their future intellectual and emotional development.

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Practical Steps for Integrating Piaget's Theory in the Early Childhood Curriculum

Jean Piaget is a developmental psychologist who is famous for his theory of the stages of children's cognitive development. This theory is highly relevant to early childhood education (ECE) as it can help teachers understand children's cognitive abilities at different stages of development. Here are practical steps for integrating Piaget's theory in the ECD curriculum (Sung & Kim, 2020).

The first step is to deeply understand the stages of cognitive development proposed by Piaget: sensorimotor (0-2 years), preoperational (2-7 years), concrete operational (7-11 years), and formal operational (11 years and above). For early childhood, the main focus is on the sensorimotor and preoperational stages. Teachers must recognise the characteristics and abilities at each of these stages in order to design appropriate learning activities (Kim, 2024).

Based on an understanding of the developmental stages, teachers can structure learning activities according to children's abilities. For example, in the preoperational stage, children begin to develop symbolic abilities but still find it difficult to think about things from the perspective of others. Activities that can be done include using role play, puppets and pictures to develop their symbolic understanding (Aslan, 2019).

Piaget emphasised the importance of direct experience and exploration in children's cognitive development. Teachers should create learning environments that are rich in stimulation and allow children to explore and experiment. For example, play areas equipped with materials that children can construct and change, simple science experiments, or art projects that allow children to try different materials and techniques (Veraksa, 2022).

To develop independent thinking and problem-solving skills, teachers can use open-ended questions that stimulate children to think critically and creatively. Examples of questions such as 'What will happen if...?' or 'How can I make...?' can trigger children to think more deeply and develop conceptual understanding (Castner et al., 2022).

Assessment of children's development should be done through direct observation and documentation of their activities. Teachers can use anecdotal notes, photos, and portfolios of children's work to assess their cognitive development over time. In this way, teachers can monitor children's progress and adjust learning activities according to their needs and abilities (Kim, 2024).

Integrating Piaget's theory in the ECD curriculum requires a deep understanding of the stages of cognitive development as well as practical application through appropriate activities. With these steps, teachers can support children's cognitive development optimally in a fun and adequate learning environment.

Evaluating the Impact of Piaget's Theory on Child Development in Early Childhood Centres

The application of Piaget's theory in early childhood education (ECE) is very important. The theory focuses on the stages of children's cognitive development and emphasises the importance of experience and exploration in learning. To evaluate its impact, we must look at how it helps the development of children's cognitive, social-emotional and problem-solving skills in ECD settings (Mudzielwana, 2022).

One of the positive impacts of applying Piaget's theory is seen in children's cognitive development. With learning activities tailored to the sensorimotor and preoperational stages, children show improvements in logical thinking and understanding of basic concepts. Through activities that encourage exploration and experimentation, children are able to construct their own knowledge in meaningful ways. For example, they can understand the concepts of number, shape and order through manipulative play (O'Gorman, 2023).

Piaget's theory also has a positive impact on children's social-emotional development. When children join in group activities or role play, they learn to interact with peers. This helps them develop empathy, sharing and co-operation skills. In addition, the safety of a learning environment that supports exploration allows children to experiment without fear of failure, so they also become more confident and independent (Saracho & Evans, 2021).

Piaget-based learning approaches enhance children's problem-solving and critical thinking skills. When children are faced with situations that require solutions, such as art projects or scientific experiments, they learn to identify problems, make hypotheses and test solutions. This helps them develop analytical thinking skills early on, which is very useful in further learning and everyday life (Layne, 2022).

Teachers who apply Piaget's theory are also more skilful in identifying children's individual needs. By observing each child's developmental stage, they can design and customise learning activities accordingly. This makes for a more personalised approach to education, where each child is seen as a unique individual with different learning capacities. Children who experience difficulties are given timely interventions, while those who are more advanced are challenged accordingly (Sartika & Fransiska, 2024); (Irwan et al., 2024); (Juliani & Aslan, 2024).

The application of Piaget's theory in the ECD curriculum is often associated with research results that support its effectiveness. Through observation and documentation of children's development, teachers can collect empirical data on the extent to which this approach has had an impact on their education. This data allows teachers and ECD managers to evaluate and develop best practices in teaching and learning activities (Layne, 2022).

Overall, the application of Piaget's theory in the ECD curriculum has shown significant impact on various aspects of child development. Achievements in positive cognitive, social-emotional development and problem-solving skills underline the importance of this method in early childhood education. Through a child-centred and research-backed approach, teachers can support and facilitate children's holistic development in ECD.

Conclusion

The application of Piaget's theory in early childhood education curriculum development is crucial as it provides a scientific basis for how children learn and develop. Piaget's theory, which focuses on the stages of children's cognitive development, such as sensorimotor, preoperational, concrete operational and formal operational, helps educators design learning activities that match children's abilities and developmental needs. By understanding these developmental stages, teachers can structure materials that are more relevant and challenging for children, while preventing the introduction of concepts that may be too difficult or abstract for them.

In addition, Piaget's theory emphasises the importance of learning through direct experience (active learning). This can be realised in everyday classroom activities, such as playing with manipulative materials, environmental exploration, and hands-on projects that allow children to learn through interaction with the real world. This approach not only makes learning more interesting and fun for children, but also facilitates deeper understanding and more meaningful knowledge as children can relate new concepts to their own experiences.

The implementation of Piaget's theory in the curriculum also encourages the development of critical thinking and problem-solving skills from an early age. Through activities designed to encourage independent exploration and discovery, children are invited to ask questions, make predictions and test their own hypotheses. This process

not only builds basic cognitive skills but also establishes a positive attitude towards lifelong learning. Overall, by integrating the principles of Piaget's theory, early childhood education curricula can become more adaptive, child-centred and effective in supporting children's intellectual, emotional and social development.

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