## IMPLEMENTATION OF SELF-DIRECTED LEARNING IN THE ALPHABET AND NUMBER EDUCATIONAL GAME (BETA) TO ENHANCE CHILDREN'S SKILLS IN DEVELOPING 21ST CENTURY LEARNERS

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## ABSTRACT

In the era of globalization and the Industrial Revolution 4.0, early childhood education faces challenges in adapting to the rapid development of Information Technology. Conventional learning methods are considered less effective, creating a demand for innovative approaches that enhance interest and comprehension among kindergarten children. One proposed solution is the implementation of Selfdirected Learning through educational games. This approach empowers children to analyze their learning needs independently, set learning goals, choose appropriate strategies, and evaluate outcomes through feedback features provided by the game. This study designs and develops the educational game BETA (Alphabet and Number Learning) on Android with handwriting skills features, using the Game Development Life Cycle (GDLC) method. GDLC is chosen for its effectiveness in structured, collaborative, and efficient game development. The BETA game is expected to serve as an enjoyable and interactive learning medium, capable of fostering 21st Century Learners who are creative, communicative, and technologically adaptive.

*Keyword:* Conventional Learning, Self-directed Learning, Educational Game, Android, Game Development Life Cycle, 21st Century Learner