Enhancing Life Skills in Early Childhood Education: How Digital Puzzles Make It True?

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Abstract: *In the rapidly evolving digital age, building children's life skills through creative play has become a crucial and popular technique in early childhood education. As our review result, we propose employing digital puzzles to encourage creative play in early childhood education. Playing creatively with a digital puzzle can significantly improve children's life skills. They must assemble puzzle pieces to create the desired image pattern. According to various research and publications, creative play with digital puzzles can promote life skills in early infancy. We specifically look at the challenges of doing a literature review on improving life skills in early childhood education. Life skills in literature are divided into four sections based on the following themes: (1) the new concept of early childhood education, (2) integrating life skills in early childhood education with play and media, (3) encouraging creative play through digital puzzles, and (4) digital puzzles for life skills in early childhood classrooms: a case study in Indonesia. The article introduces each of the four themes with a contemporary anecdote and then presents a literary consensus. The article concludes with changes to improve life skills in early childhood education through creative play and digital riddles. Digital puzzles, as a form of creative play, help young children build life skills that will make them happier and more resilient in the face of daily challenges. Young children can grow into adults capable of creatively overcoming daily problems.*

Keywords*: life skills, creative play, digital puzzles, early childhood education*

INTRODUCTION

Life skills education or socio-emotional skills are an important means to equip children to be successful at school, work and life in the future, in addition to digital literacy skills which are basic skills to contribute to the development of the digital economy (UNICEF, 2012). Recognizes the need for comprehensive skills development, initiative Reimagine Education UNICEF, in collaboration with Generation Unlimited (GenU) and Giga, aims to connect every child worldwide by 2030 by providing world-class digital learning solutions holistically to build children's life skills. Data from 77 countries shows that less than three-quarters of children aged between 3 and 5 are on a path to suboptimal skill development (UNICEF, 2022). In Indonesia, The Central Statistics Agency reports about the

Profile of Early Childhood Children who are victims of crime around 0.03% (Direktorat Statistik Kesejahteraan Rakyat). Even though it is relatively small, this figure is still a concern considering that ideally no young children should experience crime because they are not yet able to protect themselves. This data illustrates that the condition of early childhood education in Indonesia has not been able to develop complete life skills, thus potentially hampering children's development, especially their ability to survive in a challenging environment.

Early Childhood Education (ECE) development is critical to children's growth. Child development dictates when children grow up (Britto et al., 2017); hence, early childhood education is a crucial formal environment that gives life skills to children from conception to eight years old (Aguh & Olutola, 2023; Hanbury, 2009; Hussain & Juma, 2006). Meanwhile, youngsters learn life skills as early as possible to lay the groundwork for future development in all areas of their lives. In the future, children will be able to develop freely. According to the National Academy of Sciences (2015), the domain of child development and early learning is disputed and classified across the numerous fields and disciplines involved in research, practice, and policy about children aged from birth to eight.

Furthermore, there is a strong relationship between child development and early childhood education. Knowledge of child development is essential in early childhood education because it helps educators make decisions about children's learning (Saracho, 2023; Woodhead, 2006). Since the emergence of COVID-19 in early 2020, the order of life has shifted, including the scope of early childhood education. This reality requires teachers to change the learning process, including teaching life skills in early childhood. According to the OECD (2018), to prepare for the future education of skills in 2030, people must be able to think creatively and develop new products and ideas that can bring vital solutions to economic, social, and cultural concerns at a reasonable cost. Innovative economies are more productive, resilient, adaptable, and able to maintain living early childhood education standards.

Innovation and creativity in early childhood education are currently widely used to promote life skills in numerous fields of study (Indriasih, 2023; Loretha et al., 2023; Seeduang et al., 2023; Wahyuningtyas, 2019). One example of innovation in early childhood education in the period of Society 5.0 is the widespread use of digital media in learning, which has a positive impact on child development (National Academy of Sciences, 2015). According to the OECD (2018), if students are to participate actively in all aspects of life, they must do so in several situations, including social and digital spaces. Early childhood educators face a challenge in incorporating technologies, digital media, and popular culture into play-based learning experiences (Edwards, 2015). Therefore, to effectively implement digital media in a meaningful learning context, teachers must ensure its high quality. Proper use of high-quality digital media can improve learning effectiveness, efficiency, and motivation, helping the growth of children's life skills.

Digital puzzles are a prominent form of digital media in early childhood education, particularly in life skills. Digital puzzles are the most popular for children's enlightenment because they have strong logic, mathematical rationality, and educational functions, as well as the ability to provide children with enjoyable feelings and problem-solving opportunities (Wang et al., 2023). Digital puzzles are digital media that have a favorable impact on children when they play (Kristianti et al., 2018; Wang et al., 2023). Play is an essential way for children to learn in early childhood education. According to Parker et al. (2022), learning through play is a powerful, quantitative, and effective method for promoting children's balanced development. Play can help children acquire the skills to flourish in a changing society (Right to Play UNESCO, 2018).

We emphasize the advantages of learning through play for overall skill development in early childhood. Play is essential for children's social, emotional, cognitive, and physical development. Play concentrates and can maintain focus for extended periods. They practice basic skills and learn concepts. They solve problems and link ideas in intuitive ways. They learn to express and control their emotions while they play with others. In their efforts to communicate needs and express ideas, they pay attention and listen to understand others' perspectives. As Vygotsky (1978) noted, play has a significant influence on child development in terms of fostering speech, development, cognitive processing, self-awareness, and self-regulation; thus, play is a powerful learning strategy that is child-led and driven by curiosity, exploration, and joy (Parker et al., 2022). Children understand how to do it from the moment they are born. Play is a key mechanism of social-emotional development that stems from human instincts (Erikson, 1977); therefore, children learn naturally through play. The play contributes to the development of life skills. Children can use their creative and critical thinking skills and build communication skills through play activities since children's interactions are complicated (Paes, 2019).

METHOD

Conducting a Literature Review on Life Skills in Early Childhood Education through Creative Play with Digital Puzzles

This study conducts a literature review on life skills in early childhood education, utilizing Moher's Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) technique. Moher's systematic review model has four stages: identification, screening, eligibility, and inclusion (Moher et al., 2009). Because of its extensive multidisciplinary coverage and reach, this study identified literature using the Google online database. We searched for the following terms in various combinations: life skills, early childhood education, creative play, and digital puzzles. We did not limit our search to the year the found item was published. We discovered further literature on government and educational organization

websites. Second, there was a study of relevant literature with an accent on global and national indexing. We included quantitative, qualitative, and research and development materials such as policy documents from international organizations, literature evaluations conducted by experts from various industries, and resources provided by leading professional organizations. Third, we determined the eligibility of the literature using the screening process. Fourth, we incorporated four subjects based on the literature review. Each theme addressed (1) a new concept in early childhood education, (2) incorporating life skills into early childhood education through play and media, (3) encouraging creative play with digital puzzles, and (4) digital puzzles for life skills in early childhood classrooms—a case study from Indonesia.

RESULT

The New Concept of Early Childhood Education

Around 2000, the establishment of the Directorate of Early Childhood Education led to a surge in popularity for early childhood education. ECE is described in Article 1, Paragraph 14 of the National Education System Law 2003. Its purpose is to develop children from birth to six years old by providing educational opportunities that allow them to grow and develop until they are ready to enter secondary school (Undang-Undang RI Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional, 2003). According to Härkönen (2002), early childhood education is a preschool activity. In this approach, children who attend a high-quality preschool for children of working parents are better prepared to enter a conventional school (UNICEF, 2019). In addition to education and instruction, ECE provides basic care. ECE, also known as Early Childhood Education and Care (ECEC) and Early Childhood Care and Development Education (ECCDE), aims to prepare and mature children for a smooth transition to school. Children who get high-quality early childhood education are more likely to succeed in school and later in the labour market (OECD, 2020).

According to several reports, early childhood education is a holistic education that improves students' chances of success in their future occupations. We define early childhood education (ECE) as educational activities delivered in official and informal settings such as schools for children from birth to six years. The OECD recently presented a novel concept known as "early childhood education," positioning it as a 21st-century investment in human capital. As an example of how experts agree, the OECD says that ECE is a broad term that is widely seen as an important part of early learning and the growth of cognitive and social-emotional skills that are linked and help each other (Auld and Morris, 2019).

Integrating Life Skills in Early Childhood Education with play and media

Early childhood education (ECE) plays a vital role in stimulating the growth and development of children because ECE is the foundation of a child's personality. Currently, education solely concentrates on achieving cognitive outcomes despite the need for children to develop self-help and empowerment through life skills. Regarding this, high-quality modes of education that accommodate life skills learning are essential (Nurbatra & Masyhud, 2022), so school is not only the place where children learn the knowledge, skills, and competencies to access workforce opportunities later in life but also where they learn social skills and ways of being in the world (Adibsereshki et al., 2015). Children's ability to understand another person's thinking and feelings is fundamental for school, peer relations, employment, and life success. They adapt better to new schools and environments if they can understand and be reflective about the world around them. Recognizing that children learn best through play and interactive activities is very important. With our support and guidance, we must allow them to practice and develop their entire skill set.

Early childhood education is used to help children improve in a variety of areas, including the ABCD5E curriculum for problem-based learning (Loretha et al., 2023), personal and social skills for street kids (Adibsereshki et al., 2015; Wahyuningtyas, 2019), emotional skills (Colombini, 2013), self-regulation, making wise decisions, and making friends who can support each other (Kirchhoff & Keller, 2021). There are various definitions for life skills. To determine the skills required to promote children's growth and development, we presented numerous definitions and conceptualizations of life skills. In accordance with UNICEF, UNESCO, and the WHO in UNODC (2002), "list the ten core life skill strategies and techniques such as: problem-solving, critical thinking, effective communication skills, decision-making, creative thinking, interpersonal relationship skills, self-awareness building skills, empathy, and coping with stress and emotions." We also use play and game media to reference numerous definitions of life skills and their practical applications, as well as quotes from significant industry personalities. We present significant examples of diverse life skill definitions, features, and applications from several experts (refer to Table 1).

Table 1. Influential Conceptors: Definitions, Aspects, and Applications

Conceptors	Definitions	Aspects	Applications
PAMELA MAY (MAY 2011)	Life skills are children's abilities for well-being and confidence, so they are happier children and learn more successfully.	Child development in practical skills: 1. Self-esteem 2. Communication 3. Struggling 4. Learning new knowledge	Games, construction, puzzles, and the small world

Conceptors	Definitions	Aspects	Applications
		5. Social constructivism 6. Creative thinking 7. Physical prowess 8. Motor skills 9. Social skills	
ELLEN GALINSKY (GALINSKY, 2010)	Life skills are children's abilities to survive, navigate life, and thrive today and in the future in a complex, distracting, fast-moving, and stressful world.	The seven essential life skills every child need: 1. Focus and self-control 2. Perspective taking 3. Communicating 4. Making connections 5. Critical thinking 6. Taking on challenges 7. Self-directed, engaged learning	Let's play: Using games to promote concentration and attention skills with puzzles, board games, leggs, and other media (Cole, 2016).
CLARE HANBURY (HANBURY, 2009)	'Life skills are abilities that help us to adapt and behave positively so that we can deal effectively with the challenges of everyday life' (WHO, 1997).	The life skills handbook for working with children: 1. Decision-making 2. Goal setting 3. Problem-solving 4. Coping with stress 5. Coping with emotions 6. Negotiating 7. Friendship 8. Interpersonal relationships 9. Empathy 10. Critical thinking 11. Creative thinking 12. Resisting peer pressure 13. Assertiveness	Methods for teaching life skills activities: Games and exercises, picture cards, role play, drawing, group discussions, and surveys (Hanbury, 2009).

In general, life skills are the qualities that develop intra- and interpersonal skills. We can improve children's life skills by participating in fun activities with other youngsters (Galinsky, 2010). It also means that one of the best methods for children to learn is through play, and video games are an excellent way to focus on improving essential skills. Unbelievably, classic preschool games serve a purpose beyond children's mere enjoyment. They play a meaningful role in the learning process by encouraging youngsters to form connections, allowing them to vent their frustrations, and teaching them life skills.

Play is essential in early childhood education since it helps with learning. The play contributes to the development of life skills. Through play, children can explore and create a world with conditions and values that differ from reality. Children use their creative thinking talents and share the world they have built with their peers. Children acquire negotiating skills through play activities because their interactions are complex. Children can learn from peers of varying ages and backgrounds, making play a challenging learning environment. During these play experiences, children experiment with, expand, and change the play world they have built. With play, it helps children acquire academic outcomes such as creative thinking, critical thinking, learning to learn, and communication.

Play Allows Children to Develop Their Thinking and Problem-Solving Skills. Puzzles Are an Example of An Educational Learning Media That Promotes Children's Cognitive, Linguistic, Motor, Social, And Emotional Development (Aral Et Al., 2012). This Report Highlighted Efforts to Integrate Early Childhood Education by Enhancing Life Skills Through Creative Play with Digital Puzzles.

Encouraging Creative Play through Digital Puzzles

As the name suggests, creative play is an activity that involves children's creativity while playing (Wardhani & Kusumaningtyas, 2022). It is widely recognized that play and creativity are essential elements as integrated domains that impact early childhood learning and development (Avgitidou, 2016; Marsh et al., 2018; Tee et al., 2017). Creativity is related to life skills: effective problem-solving, adaptability, diverse indicators of success, and various indicators of health, learning, development, and growth (Indriasih, 2023; Runco, 2021; Sumiyati et al., 2020).

Creative play is a play activity that gives children the freedom to imagine, explore, and produce a unique form of creativity. Creative play is a play activity that provides opportunities for children to express their thoughts and feelings symbolically. Creative play is free play when a child initiates and leads the activity. There is no influence from an adult, and the child decides what he/she wants to play, with whom, and for how long. Through this free play, children experience building life skills (Paes, 2019). Using appropriate types of activities, games, or technology for play can build those skills. Among the advantages of using technology for children when playing are developing creativity, problem-solving, and visual thinking (NHSGGC, 2017).

The rapid advancement of technology in the 5.0 era necessitates that all school managers use digital technology to improve children's learning abilities. Early childhood education can utilize digital technology, such as digital comics, to foster life skills (Indriasih, 2023). Play is a crucial method for teaching life skills to young children. At the time, digital technology was

enjoyable and helped children develop the abilities required through play (Kauffmann et al., 2020; Lourenço et al., 2021). When we refer to digital technology, we imply physical devices like computers, tablets, and phones for games and applications. In this study, we examine the digital puzzle. Digital puzzles are a novel play approach that encourages children's creative problem-solving processes, creativity, and open-mindedness (Tonéis, 2011). Digital puzzles are an innovative type of learning for children that stimulates their interest and willingness to study.

Puzzles are a classic toy for early childhood. Early childhood education has long used puzzles as a teaching tool (May 2011; Syukur et al., 2020). Initially, puzzles consisted of interlocking wooden blocks (Van Delft & Botermans, 1995) and wooden bricks (May 2011). Van Delft & Botermans revealed that almost all living things tend to test their life skills with puzzles. They tested the chimpanzee as an impressive animal in a classic experiment (German psychologist) by Wolfgang Kohler. They solved the problem after several confusing experiments (Van Delft & Botermans, 1995). Therefore, puzzle as a gaming medium can explore child development (Asmawati, 2023; Nazilah et al., 2022).

Puzzles are a great way to provide an enjoyable learning environment for young children. They are available in a wide range of styles, materials, and stages of difficulty. Puzzles are a more solitary game for adults and children for similar reasons. They provide the challenge to themselves rather than the competitors and guarantee immense satisfaction once fulfilled. Playing puzzles is often relaxing and enjoyable to return to on numerous occasions, yet it is still fun.

Simple jigsaw puzzles help children develop finger strength, perseverance, and problem-solving skills. Playing with these puzzles encourages children to look at pictures more carefully, going over them from top to bottom and left to right. Through doing this, children may notice visual similarities and differences. Puzzles develop memory skills and the ability to plan, test ideas, and solve problems. While completing a puzzle, children need to remember shapes, colours, positions, and strategies to complete them. The experience of completing a puzzle can also help children learn to accept challenges, overcome problems, and deal with frustrations (Queensland Government, 2023). Puzzles of increasing complexity are available to keep children challenged as they grow. There are plenty of daily jobs that are like puzzles. Fitting items into a box or bag is identical to assembling jigsaw pieces into a puzzle form. Puzzle play is a great way to develop cognitive and fine motor skills. When caregivers use puzzle time strategically, it can also be an opportunity to develop social, emotional, and language abilities.

DISCUSSION

Digital Puzzles for Life Skills in early childhood classroom: A Case Study in Indonesia

Research and development of digital puzzles in Indonesia aims to improve life skills in early childhood education. Kristianti et al. (2018) executed research and development on digital puzzles to enhance comprehension of early childhood learning behaviours. Their study demonstrated that games designed for virtual collaborative learning on a tablet PC facilitated greater relaxation and reduced aggression in young children. Engaging in digital puzzles for children aged 0-3 years positively influences the development of memory, social skills, and emotional components, particularly when children collaborate and communicate with others.

Wathoni et al. (2021) also developed digital puzzles to enhance visual-spatial skills and religious character. Their findings indicate that visual-spatial stimulation enhances the capacity to discern patterns and colours in images. Images of prayer movements as puzzles can be an integrated learning tool with Adobe Flash Professional CS6 software. This improves religious traits like morals, values, and behaviour that is moral. This development enhanced the visual-spatial skills and moral character of children aged 5 to 6.

Playing with puzzles has a tremendous impact on a child's physical skills. It promotes fine motor development through the synchronization of small muscles. Children with strong fine motor abilities find it easier to write, draw, and learn to play instruments. The following article discusses the benefits of puzzles for children. When children complete a puzzle, they learn various skills without realizing it. Puzzles allow kids to develop problem-solving skills by teaching them how to place a piece in the correct space, cognitive skills through visual-spatial awareness, fine motor skills by teaching them how to grasp and pick up pieces in the proper order, and social skills by completing puzzles with peers (Aussie Childcare Network Team, 2022).

Puzzles focusing on numbers, alphabets, or animals allow children to learn and increase their knowledge. As children continue to solve various puzzles, their self-esteem and confidence grow. Children will learn how to solve problems in new ways by completing multiple types of puzzles. Solving puzzles elicits implicit learning like what we observe in the block area. Despite the existence of 'right and wrong' answers in puzzles, we must approach their solution in a specific manner. They teach us that once we grasp small portions of knowledge, we can merge them with other parts to form a highly satisfying whole. The gradual revelation of a whole

picture emerging from an initial confusion of seemingly unrelated parts is equally delightful. A young child creates a new universe using blocks or animals (May 2011). We create classification of benefits of puzzles to enhance life skills in young children (See Table 2).

Table 2. Classification of Benefits of Puzzles to Enhance Life Skills in Young Children

Life Skills	Benefits of Puzzles
Gross motor skills	Working with larger puzzle pieces and stacking puzzle games and blocks can enhance a child's broader movements. Gross motor skill development involves the large muscles: the arms, legs, and torso. Gross motor activities are essential to everyday physical activities like walking, running, throwing, lifting, and kicking. So, when children are playing with big pieces of puzzles, it gives them the required movement to develop gross motor skills. Usually, a child starts playing with puzzles with big pieces and arranges them on the floor. Building puzzles engages the child's body and fosters the development of gross motor skills.
Fine motor skills	One of the most significant aspects of development for children is their fine motor skills. Puzzles enhance fine motor skills. Children strive to grab with their fingers, hold with their palms, and adapt by balancing their hands and strengthening the palm muscles. The rise of fine motor skills is critical to a child's writing ability.
Hand-eye coordination	Repeated practice with puzzles supports hand-eye coordination. A child learns to get an idea of which pieces of the puzzle are going to fit where and perform accordingly. Better hand and eye coordination are responsible for that.
Problem-solving skills	Puzzles give them challenges to perform. Children who practice with puzzles have problem-solving ideas because they know how to perform the challenge. Educators can help children learn about the strategies for solving a puzzle. Every puzzle presents a problem that requires a solution. Each puzzle presents a challenge and necessitates strategic thinking to solve.
Memory	Puzzles aid in improving memory. Children practice puzzles and must remember which piece fits were. This technique helps them improve their memory.
Self-esteem	Self-esteem is a self-picture that includes abilities, social competence, and personal looks. High self-esteem is when children believe they can succeed and know they have someone to support them. Children enjoy doing constructive work after completing a puzzle or trying it positively. They feel confident and believe that they can solve other puzzles. These pleasant emotions drive them to a better life (May 2011).
Socialization	Eagle (2012) discusses the effective use of digital puzzles to enhance children's social interactions. Puzzles make children socialize. They learn to share, cooperate, communicate, interact, wait for their turn, make them humble, give feelings of wholeness, and be more active in groups. Children cooperate and collaborate to experience the satisfaction of working toward a common goal.
Language and concept development	Puzzles strengthen vocabularies, such as shapes, colours, animals, and transportation. They can also help little one's practice expressive language skills like requesting (gesture count) and receptive language skills like following simple directions. The shapes and images on the pieces represent things and concepts. A parent can further reinforce these concepts by expanding their children's vocabulary.

Life Skills	Benefits of Puzzles
Success and self-confidence	Playing puzzles cultivates a sense of competence and worth. Feeling competent is one of the basic emotional needs of a child. Puzzles are a wonderful way to experience success since a completed one is a very clear symbol of achievement. Playing puzzles is also a challenging activity, so children learn how it feels to put in a lot of effort to achieve that success (May 2011).
Perseverance	Puzzles are a game that will offer children a sense of success once completed. It is a block that allows children to build anything at any time. Children typically like the feeling of accomplishment that comes with completing a task. It is a recipe for perseverance because it relies on a child's drive to finish the puzzle and enjoy a sense of accomplishment. Puzzles enable children to complete little tasks while working toward a larger goal. As children work on puzzles, they learn strategies for solving them more quickly and efficiently. They could begin by arranging the pieces along the edges or sorting them by colour and shape.
Concentration	A puzzle must be completed for a child to feel they have done it correctly. This means they are likely to stretch to work on the task for as long as necessary. Repeatedly pushing the attention span will lead to overall improved concentration over time.
Relieve tension	Not only do puzzles develop many physical, social, and cognitive skills, but they also provide an emotional release. Working on quiet activities is a great stress reliever and a way to relax while learning.

CONCLUSION

Early Childhood Education provides a crucial foundation for children's development and a vital element of a sustainable educational framework. Early childhood is a critical phase in a child's cerebral development and the establishment of personal potential. Incorporating life skills education into the school curriculum can yield improved outcomes. Digital puzzles are accessible instruments for children's creative and developmentally suitable play activities that facilitate enjoyable and meaningful learning. We are apprehensive regarding the deficiency of life skills in early childhood and acknowledge that understanding creative play through digital puzzles is becoming more vital. We assert that digital puzzles can enhance children's life skills with full happiness.

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