

Enrich Schematization in Children: Play as The Tool for Cognitive Development

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ABSTRACT

Cognitive development gets toned by the improved external environment that can facilitate developing children. The play basing Piagetian cognitive development found to be a useful tool in enriching cognitive development in children. Parents and teachers can use naturalistic play therapy provided them with basic knowledge about Piagetian cognitive development and related play in the early stage of development. Thus, they can use their own pattern of play with age-related suitability that can enrich schemas in children and promote schematization process and cognitive development. The purpose of the article is to communicate newly created play therapy supporting cognitive development. Further to understand the role of play in Piaget's schematization process. This article is useful in conceptualizing the perspective of cognitive development and its association with an interactive play in enriching schemas in the early development of children.

INTRODUCTION

Cognitive development takes place throughout the developmental stages of one's life. It is a process of constructing various thought processes that involved in remembering, problem-solving, and decision-making, from childhood through adolescence to adulthood. Children progress through a series of four critical stages of cognitive development (Gruber and Voneche, 1995). Dr Jean Piaget was a Swiss psychologist was the first to make a systematic study of cognitive development of child and explains how a child constructs a mental model of the world (McLeod, 2018). Indeed, this stage to stage changes that take place in the developmental stages is an integral part of Piagetian cognitive development (Gruber and Voneche, 1995). Throughout the development, children react to their environment and actively involved in learning about their environment. The child's acquired

knowledge gets composed in the schemas through schematization process. That start from developing basic units of instruction that are an organized unit of past experiences and serve as a basis for understanding new ones (Gruber and Voneche, 1995).

Introduction of age-related play can expand the schematization process in children. It has been learned from the literature that age-related play in children take place through the different developmental stages is helpful in enriching cognitive development. It has been learned that play can support schematization process of cognitive development. Further, it is understood that play is a tool in enriching cognitive progress can be made use from an early stage of development more specifically in infancy and early childhood. Play tool is useful not only for healthy children; that can be used as a therapeutic tool, and its efficacy has been proved its success.

Facts observed regarding natural play in developing children

At the first level the stage is characterized by simple reflexes, uncoordinated movements, and the first discrimination and recognition of human and nonhuman objects. This early stage starts from birth to 2 months: Play objects at this level of

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cognition merely strives to focus attention on an interesting object, to produce reactions that demonstrate recognition and provide experiences of reflexive grasp. 2 to 4 months: Play facilitating cognition at this level uses visual observation of stationary and moving objects, early sound play turn taking, reflexive holding of an object and moving it within the visual field. Mouthing of objects are preferred at this stage than handling with hands. 4 to 8 months: In this stage, intentional sensorimotor adaptation is dominated by the repetition of discovered patterns. Objects that produce a clear, direct response to the child's actions like percussion toys. The child grasps merely and handing objects from one hand to the other than releasing often until all objects within reach. 8 to 12 months: Play strategies from one toy are tried out on another toy. Simple combinations of objects are tried out such as banging a spoon on a plate and putting things out of containers. 12 to 18 months: In this stage, child play goes with experimentation and learns functional uses of one object on another. Play that includes putting in and taking out objects, transporting and matching the parts alike are suitable. 18 to 24 months: In this stage child start imitating others; here play involves modelling to explore objects. 2 to 4 years: Child appears with attitudes of animism, realism, and magical thinking are the characteristic behavior that gives a way to interactive games with increasingly complex shared rules.

This article is interconnecting some facts observed in the natural play of developing children in the various stages of Piaget's cognitive development. In recent years play therapy interventions have also been applied to infants and toddlers; the families who used play therapy as gained optimal benefits in early intervention of their children (Kelly-Zion *et al.*, 2008). The cognitive development suggests that children move through four different stages of mental development in acquiring knowledge from the external environment. Further, leads to intellectual expansion and cognitive development. Piaget believed that children in the learning process are like little scientists - as they perform experiments and make observations as they interact with the environment; this is how they learn about the world. As kids interact with the world around them, they continually add new knowledge, build upon existing knowledge, and adapt to the previously held ideas and accommodate further information (Cherry, 2018).

In developmental stage children should provide with an opportunity to get exposed to rich and appropriate environmental stimuli thereby children can add these experiences in their mental schemas as they mature.

Advantages and disadvantages of play method basing piaget's theory

Usefulness: i. Piaget's work is recommended to all pediatric therapists, occupational therapist, cognitive behavioral therapists who find them frequently addressing cognitive development. ii. Provided with training teachers and parents can also facilitate cognitive development in children. iii. Play therapy can be used for normal children and children with neurodevelopmental problems. **Limitation:** i. Parents and teacher training is not available. ii. Lack of awareness. iii. Economic feasibility.

Here authors would like to propose some of the suitable plays that can be introduced to the parents as well as teachers.

In Piaget's developmental stage theory of cognitive development, he suggested that learning of language is a part of cognitive development requires appropriate environmental stimuli and experiences as the child matures (Chapman and Routledge, 2005). Piaget's theory of cognitive development is one of the significant contributions to developmental psychology and education. It has a firm root in biology and epistemology. The epistemological concepts go with constructivism, adaptation, equilibration, abstraction. Genetic epistemology and genetic psychology were closely interrelated; it then briefly summarizes Piaget's theory of the development of intelligence focusing stages and factors of development (Anik, 2001). The Piagetian theory is the premier window on both infant cognitive development and plays development, the relationship between play and cognition is deeply interlaced for therapists. Using object play to facilitate cognition is based on the Piagetian stages found in the sensorimotor period that is birth to 2 years (Munier *et al.*, 2008). Two critical processes involved in this learning process is the assimilation of new knowledge and expertise as they processed and accommodated these new experiences with existing internal organized patterns of thought and behavior that is known as schemas (Chapman and Routledge, 2005). Richer the learning experiences of children when they play against their environment better schematization occurs. Learning takes place through assimilation, i.e., organizing information and absorbing it into existing schema further accommodating new information's regarding objects or subjects when that cannot be assimilated into the existing schema. Indeed, schemata's get modified to include the object and subject as the children learn more, and it gets updated.

Further, this knowledge is stored as mental schemas as a reference, and more also, when they come across the similar experiences, this has been used in accommodating new ones and equilibrated the new and old schemas. The new knowledge from the experiences are assimilated and then adapted into existing schemata often updating those schemata with the unique experience with equilibration (Berger, 2014). The assembled schemas enrich child's cognition that makes them easy to interact with the world around them. Thus, this article spells that it is significant to update our schemas that can help people in their intellectual adaption. Indeed, it is virtuous to provide the children with richer play environment that can enrich their schematization process. Generally, in cognitive development in children create their own schemata for each of their experiences and the knowledge that gained from their environment. These updates are significant for the children for better adaption.

The teachers and parents can make use of play as a tool to support and enrich schematization process. The play as a tool can develop creatively by the parents having an understanding with given developmental model. However, assimilation and accommodation take its own time, during this period a child remains in each of these stage that is controlled by their personal cognitive development (Block, 1982) that can be stimulated with creative plays that communicated in the Table 1 introduced below. In the developmental process of children, as they learn to make sense of the world around them, they eventually pass through four-stages as the mind processes new information as they encounter them (Piaget, 1952). Piaget posited that children progress through these four stages that universally seen all the children under

development (Piaget, 1959). Understanding and conceptualization of stages of development, learning aspects related to development and guidelines for the teachers and parents to enrich the schemas that teachers and parents to build the most suitable 'play' for children through interactional play with the environment are listed in Table 1.

It has been learned that play is fundamental to cognitive development. In Piagetian four stages and their respective sub-stages of 'play' has been proved to be helping tool in child's cognitive development. Thus, understanding what actions, they can take in different situations, the effects of their actions, whether those actions are right for the circumstance. Children commonly grow with interactional play with their environment. This play has a significant impact on their cognitive development. The very basis of the theory of play in cognitive development is that the child developmental progress in each of the stages depends upon getting the appropriate environmental stimuli at the right time. This helps them to develop meaningful mental schemas of their

environment. Thus, the stages of cognitive development can guide teachers and parents to build the most suitable 'play' for children at each stage and sub-stage so that can help them to progress to the next (Burgemeester). Children learn their environment naturally; in young children play is a part of their learning. Preschoolers more into playing that go with hand in hand with their learning process, in fact, their brains are hard at work putting together vital knowledge about the world and support preschoolers' cognitive development (Raising Children Network, 2018). Preschool children commonly engage in a lot of pretend play is observed more in middle-class modern societies this fact has been widely conceptualized by teachers and parents. Though game often has distinctly seen as a socializing tool in children; indeed, it also builds distinctly cognitive skills in them and creates a bridge between the social world and the more individualistic world of cognitive abilities (Lillard, 2002; Saracho and Spodek, 2003; Sutton-Smith, 1997).

Table 1: Guidelines for Teachers and Parents in Enriching Schematization through the Steps of Cognitive Development.

Stages of cognitive development	Learning that takes place at each stage	How learning takes place at each stage of cognitive development	Interactional play with the environment should be enriched through	Creative ways to explore plays in enriching cognition
Sensorimotor stage (Birth to 2 years)	The infant builds an understanding of himself/herself and reality through interactions with the environment. Learns to differentiate between self and other objects.	Learning takes place through the organization of information and absorbing it into existing schema & accommodating when an object cannot be assimilated in the schemata.	Child's experiences of sensory stimulations	Take any infant behavior such as feeding, urinating, excreting can be disciplined by conditioning infant through interlinking sensation with behaviors
Preoperational stage (ages 2 to 4)	The child is not yet able to conceptualize abstractly and needs concrete physical situations.	Objects are classified in simple ways, primarily by essential features.	Organizing play that has a feature of simple classifying nature of objects and subjects.	Provide rich intellectual environment. So that they can form enriched schemas
Concrete operations (ages 7 to 11)	The child's physical experience accumulates, and accommodation is increased.	Make rational/logical judgments basing concrete objects from their environment	Provision made to sensible and reasonable base in their interaction	Provide observable and demonstrable objectivity for their task in their external world
Formal operations (ages 11 to 12)	The child's cognition reaches its final form.	Think abstractly very similar to an adult now capable of deductive and hypothetical reasoning	Treating him/her as an adult allowing them to decide using their own abstraction and counterfactual thinking	After age eleven enable the children to take their own decisions give only suggestions as a guideline.

This is the table to communicate the various information insight drawn on observing children in their cognitive developmental stages introduced by Piaget.

It is significant to know about facts related to cognitive development in children that have an association with their process of making sense of the world around them and eventually pass through four-stages in which the mind processes with the new information encountered as the children move through these stages (Piaget, 1976).

CONCLUSION

This article summarizes new ways of creating a naturalistic play that can facilitate cognitive development. Introducing age-related play in developing children by the teachers and parents can enrich the mental schemas in children; the information to create age-related play has been summarized in the above table as a guide for play creation. This concept implies both normal and children with neurodevelopmental issues. Thus, understanding the implication of play work and developing self-play tools is useful in enhancing schematization signifies its usefulness for professionals, teachers, and parents who can

promote cognitive skills in developing children. This type of play can be created individually suitable to the environmental situations basing developmental pattern. Further, it can also bring the better success in therapeutic interventions. The implication of this short communication can pave the way for mental healthiness in budding children.

CONFLICT OF INTEREST

Authors possess no conflict of Interest.

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