

PSYCHOLOGY OF CHILDREN'S COGNITIVE TOWARD LANGUAGE DEVELOPMENT

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Abstract

This paper aims to explain how the Cognitive Psychology supports the language development on children. The supporting data was taken from some related books and journals. The data collection is conducted through the proper source collection used for obtaining various information related to the topic. Then the information obtained from many sources was analyzed. The result of the analyses shows that the language acquisition process begins even since infancy period. In this process, the cognitive psychology supported it. In the process of acquiring the language, the children will pass through four steps of Cognitive process namely, sensorimotor stage, pre-operational stage, concrete operation stage, and formal operation stage. The entire stages are related to human's age. In addition there are some assumptions of children's cognitive development which are children's schemas, assimilation, accommodation, and equilibration.

Keywords: *Cognitive, Cognitive Psychology, Language development*

I INTRODUCTION

The development of language from infancy to the childhood occasionally is being ignored by parents. In fact, the success of acquiring a language begins since infancy period. It is truly stated through famous hypothesis namely *critical period*, which refer to a time when it is optimal to learn a language, exists in children. The development of language itself must be supported by psychological consideration. In this case, the existence of Cognitive Psychology is exactly support the process of children's language acquisition.

Cognitive Psychology is a scientific study scoping about a mental and thought processes. In cognitive psychology, the obtained information will be presented through human senses, and be transmitted to human's brain and the will be transformed as knowledge. Therefore, cognitive psychology is well known as Psychology of Information Processing.

Cognitive psychology is introduced by Jean Piaget, a Swiss psychologist who studied the development of cognitive processes from infancy through adulthood. This is a theory which clearly explained about how the children who have capability to adapt toward their environment and interpret many kinds of object and surrounding phenomenon. Jean Piaget's theory of cognitive development focuses not only on understanding of how children acquire knowledge, but also on understanding the nature of intelligence. Piaget believed that children took at active role in the learning process, acting much like little scientists as they perform experiments, make observations and learn about the world, parents, and mates.

Cognitive psychology has a crucial role in particularly in language development. According to principle of cognitive theory, the intelligential of children and the initiate to express their ideas which are combined by parents' languages will support them to acquire the language. The acquired language further will develop in line with children's cognitive development.

II MATERIALS AND METHODS

The connection of language and cognitif aspects could be identified through the assumption of the power of language. Language can change the world and influence the mindset and view of the language user toward the reality. For instance, Japanese approximately have a high level of cognitive. It occurs due to the amount of vocabularies they have to express the reality, therefore, they own a detailed deep understanding toward the reality.

Nevertheless, the show the power of language need an effortfull when cognitive psychology does not appear to support that process. Therefore, it needs deeper understanding to ensure that the cognitive and language developmet can grow optimally as the growth of human pysical body. Piaget's theory has aided educators in understanding children's cognitive development. His theories in terms of a cognitive realm have greatly influenced on understanding of factors in language learning. In cognitif development, Jean Piaget stated some assumptions which exactly need to be considered before knowing the cognitive development process and the relation with the language aqcusition.

For providing of better understanding, this paper is completed by an explanation about how Jean Piaget theory bestowed a contribution to language development. In the effort of completing the finding, the writer used some data sources. The source of the data is categorized as secondary source in which the writer took some information related to the topic from some books and several journals of cognitive development and compared among the source to obtain the valid and reliable data. There are five book sources used and five journals obtained from website and the whole source discussed the development of cognitive process toward language leaning for children.

The following step is of data collection in which the writer collected the related sources which are books and journals, then read them alternately and compared the information obtained. Then, the obtained information were compiled and formed as data to be analyzed. The data were analyzed by comparing the obtained information and the reality in field. Firstly, the writer read all related sources and did comparing them. The second step, the writer did data reduction in which the related and supported data would be used, while the unrelated data would be omitted. The following step was compiling the obtained information and connected it with the process of language learning. The fourth step was displaying the finding in result and discussion. In this step, the writer explained the process of cognitive psychology toward language development. The last step was drawing a conclusion.

III RESULTS AND DISCUSSION

In the effort to recognize their own world actively, the children utilize their schema (cognitive schema). It is an existent concept in human's mind used for organizing and interpreting information. A schema can be defined clearly as a set of linked mental representation toward the world. It is used both to understand and to respond the situation. It refers to the assumption that we store these mental representations and apply them when needed.

Regarding to the existence of schemas, Piaget emphasized to the importance of these in cognitive development and he described in detail how these are developed or acquired. Piaget also believed that newborn babies have a small number of innate schemas even before they have had much opportunity to experience the world. For instance, the phenomenon of babies sucking which shows that babies spontaneously will respond to a touch toward their lips. The babies will get stimulus through someone's touching and show a same response. Babies will suck a nipple, a comforter (dummy), or a person's finger. Piaget therefore assumed that the baby has a *sucking schema*.

Piaget (1983) stated clearly that there are two responsible process of children's view in using and adapting their own schemas. The processes are assimilation and accommodation. According to Schiamberg (1985), the interaction of assimilation and accommodation in the process of attaining equilibrium accounts for cognitive development from birth to death. Meanwhile, Boeree (2006) describes that assimilation and accommodation work like pendulum swings by advancing our understanding on the world and our competency in them.

According to Boeree (2006), assimilation is the cognitive process by which a person integrates new perceptual or conceptual information into existing schemata or patterns of behaviors. Furthermore, he suggests that assimilation theoretically does not result in a change of schemata, but it does influence on the growth of schemata and is a part of development. Assimilation occurs when the children input their new knowledge into the prior knowledge they already have. Furthermore, the children assimilate their environment into a schema they form. Assimilation will use an existing schema to deal with a new object or situation. The example of this process is when the children are able to speak their first word *mom*. The children says *mom* to every woman in their family who looks like their real mother.

Meanwhile, accommodation is the process of modifying an action to fit into a new object (Solso, 1995). Accommodation occurs when the children adapt their selves into new information in which the children adapt their own schema into their environment. It means that accommodation will occur when the existing schema (knowledge) does not work, and needs to be changed to deal with a new object or situation. For instance is the phenomenon of telling *mom* to every woman. The mother of the children needs to explain in simple way that the word *mom* is only for her, and the other woman can be called *aunty* or *sister*.

Furthermore, Piaget also introduced a mechanism which explains how the children begin to move from one level of thinking to the next level which is called equilibration. He does believe that there will be a powerful movement of equilibrium when assimilation and accommodation are in line and attaining cognitive changes.

Through his observation, Piaget found and convinced that the cognitive development occurs in four levels or steps, in which each levels are related to human age and they are structured from different rational. The further and detail explanation will be shared in result and discussion part.

Piaget believed that all children progress through four stages and they do so in the same order. In relation to the four stages, Bukatku, D & Daehler, W. (1995) explain that during each stage of cognitive development there is unique level of analysis, internal organization and the understanding of the environmental information and events. Piaget's theory shows clearly that the children's understanding is only dependent on the stage that they have reached and teachers should take this into account as they teach learners particularly language learners at different levels of intellectual development. Here are the four stages of Cognitive development.

3.1 SENSORIMOTOR STAGE (BIRTH TO 2 YEARS OLD)

In the sensorimotor stage, the infants start to build their own thinking and understanding of their selves and the surrounding reality through interaction within the environment. This stage starts from birth to 2 years old baby which concern more on the movement and physical reactions. Babies don't ever realize they can control their own bodies otherwise it is initially based on figuring out how to perform basic motor activities. The babies do experiment of what their mouth can do as what their hands can do. They are not capable to show their cognitive activity symbolically. Yet, this is the beginning step of action schema learning. Furthermore, they will learn how to imitate some of sounds that they hear from parents and to what context that sounds should be produced.

Lazarus, S.(2010) states that this is the first stage in the growth and development of a child .children have the basic structure of organizing and adapting to their environment and their behavior tend to be circular and also develop an elementary understanding of the things around. In the relation of language development, the babies start to produce babbling at three to six months. They only produce sounds with no meaning. They commonly produce their first words at 10 to 13 months. At this age, they tend to produce only single words and directly refer to what they mean or they want. At 24 months, babies will start to combine word and they will be aware that language is important to communicate.

3.2 PREOPERATIONAL STAGE (AGES 2 TO 5)

This stage starts at around 2 years up to 5 or 6. The development is identified through the capability to talk constantly, but much of what they say does not need to be said out loud. Lazarus, S. (2010) states that child on this stage is able to reason and give logical train of thoughts. The child uses the objects and symbols to represent something which exist in a concrete form. For instance, the children might describe what they are doing even though others can easily see what they are doing. In addition, the children are still incapable to conceptualize abstractly and needs concrete physical situations which mean that the objects are classified in simple ways, especially by important features.

In the language development, their capability to understand about language rule system is increasing. This system consists of Phonology, Morphology, Syntax, Semantic, and Pragmatic. The children are able to produce all sounds and complex consonant. When, they have passed two words-level, they knowledge of semantic or meaning is speedy increasing. The vocabularies of 6 years old children are about 8000 to 14.000 words with the assumption that the words have been learnt since 12 months. The basic different of language between 2 years old children and 6 years old children is on pragmatics aspect. In 3 years old, the children increase their speaking skill which is defined as *displacement*. The progress of language in childhood level becomes a basic for the further development in elementary age.

3.3 CONCRETE OPERATIONS (AGES 7 TO 11)

This stage starts around age 7 and lasts around age 11 or 12. This is the stage in which the children are capable in using their logical thinking that explains their physical experiences. Lazarus, S. (2010) explains that child is capable of using logical processes of reasoning on the basis of concrete evidence in these stages. They are also able to solve their problem in the form of stories which deals only with the facts rather than abstract ideas. The development of language at this stage refers to specific and concrete facts, not mental concepts. Piaget believed that some people remain in this stage for the remainder of their lives, even though a child in this stage has not yet reached full cognitive maturity.

Around age 7, children start to response the group of words which are similar with the word they hear. For instance, the children can response word *dog* with *cat* or *horse* and the word *eat* with *drink*. This phenomenon shows that the children start to categorize the vocabularies used in speaking context.

We need to draw more attention in vocabularies development. The children in elementary school with the limited amount of vocabularies will face a difficulty in reading session. Yet, the children in elementary school tend to think logically and analytically which help them to understand the word construction regarding to comparative.

3.4 FORMAL OPERATIONS (BEGINNING AT AGES 11 TO 15)

This is the final stage of cognitive stages. It starts from age 11 and lasts at 15. At this stage, the children (adolescents) are not only capable to express their thinking referring to concrete objects but also the abstract one to make rational judgment. This is transmitting from children perspective into adult perspective. Lazarus, S. (2010) the concrete examples are required to help child understand the abstract relationships. The stage occurs during early adolescence and at this stage the child engages in more abstract thin thinking. By this point, the child's cognitive structures are like those of an adult and include conceptual reasoning. In this step, the children are also capable and to make a mental distinction between their selves and an idea they consider of. In addition, the children in this stage are able to use language to express and debate abstract theoretical concepts such as those found in mathematics, philosophy or logic.

In the relation to language development, this step shows the significant development in vocabularies enrichment. The children is starting to use abstract words, understanding more to the complexity of grammar and word function in sentences. In the end of adolescent, the children will be able to appreciate advanced literature more properly.

For better understanding, the following timeline gives an overview of the ages at which children generally acquire language

AGE PERIOD	LANGUAGE DEVELOPMENT
00 – 06 month	Producing sounds only, Distinguishing sounds Babbling in the end period
06 – 12 month	Babbling becomes more focused—narrowing of sounds. Sign language is used for stating objects
12 – 18 month	First words develop.; approximately 50 words
18 – 24 month	Children begin using combination of two-word phrases (example: <i>Me up</i> or <i>Get milk</i>). The additional vocabularies up to 200 words.
2 years	The enrichment of vocabularies The use of plural form properly, the use of past tense, and preposition.
3 – 4 years	The length of speech is increasing up to 3 or 4 morpheme in one sentence Using <i>yes</i> and <i>no</i> question, <i>why</i> , <i>where</i> , <i>who</i> , <i>when</i> , negative form and imperative sentence Understanding of pragmatism increases
5 – 6 years	The approximately of vocabularies up to 10.000 words Coordinating of simple sentences
6 – 8 years	Enriching vocabularies in quick periode. Starting to apply syntax's rule

P iaget did belie ve that these four stage s of cogni tive and lingu		Speaking skill increases
	9 – 11 years	Words definition covers synonym Speaking strategy increases
	11 – 14 years	Vocabularies enrichment within abstract words Understanding a complex language forms Understanding words function in sentence Understanding of metaphor and satire
	15 – 20 years	Able to comprehend an advanced literature

istic development were universal and that no children ever skipped over one of the four steps. Piaget also showed that classification was also important to learning language. Certain words and sounds needed to be grouped together to better understand and use them in speech. Classification needs to be taken a step further into sets and subsets. This can lead to a better understanding and file system for the very complex structure of language.

In addition, in language acquisition, there is a hypothesis that a critical period, or a time when it is optimal to learn a language, exists in children. Part of this hypothesis is that if a child is not exposed to a language in the early years of life, he or she will never have full intuitive command of a first language.

IV CONCLUSION

Cognitive development gives an influential contribution toward the language learning. In developing the cognitive process in children particularly in language acquisition, there are some assumption need to be considered such as, childrens' schemas, assimiltaiion, accomodation, and equilibration. Each of assumption is related one to another during the children's development. Regarding to the children's development, there are four stages of cognitive development that must be experienced by children namely, sensorimotor stage, preoperational stage, concrete operation stage, and formal operation stage. Each of them is related to human's age.

Each of human being must be passed Cognition's process. Cognition could be viewed as an element that might influence the language. It refers to Jean Piaget's view in which he observed and assumed that the development of children's cognitive aspect will be appear as an impact to the language use. The higher of the aspect appears, the higher of language uses.

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