Case Study: Child Cognitive Development

“Children must be taught how to think, not what to think.” — Margaret Mead, cultural anthropologist. Children are full of imagination. They are an explorer, adventurer and scientists. They are curious of everything. They like asking questions. As a kindergarten teacher, we have a responsibility to provide them a correct way of thinking. According to the case, Andrew is a K2 student. He is misunderstood the category of insects and animals. This situation is related the cognitive development of Andrew. Cognitive development refers to how a person thinks. There are various perspectives of cognitive development. The information processing, reasoning, remembering, memory and etc. In the following essay, I am going to suggest and explain an appropriate intervention practice to encourage the cognitive development of Andrew. The roles of the teacher are going to state and elaborate in the following designed improvement proposal.

First and foremost, the cognitive processes with reference and research to the case will be evaluated. Based on the Piaget’s Theory of cognitive development, children establish their understanding around the world through experiences. Among the key processes of cognitive development are schema, assimilation, accommodation, equilibrium, disequilibrium and equilibration.

For the stage of schema, it is a concept that helps organize and explain information. Based on the Piaget’s Theory, psychological structures to make sense of the experience in organized way. When children learn new things, they will be self-generated the information in order to adapt the new environment. Among different areas of schemas are person, social, self and event. Schema will change with age. When children grow up, they continuously to enhance their knowledge. They are more experienced. This is the reason why schema will change over time. For example, a young child develops the schema of cat. In his mind, the characteristics of the cat is small, has ears, four legs and hair. When he notices the rabbit next time, he will definitely call it a cat. Rabbit is a small living thing, has ears, four legs and hair. It is absolutely fixing the characteristics of cat. However, a schema is developed. The little child thinks that all living objects with hair, ears, four legs and small are cat. According to the provided case, Andrew could identify birds are under the category of animals. In his mind, birds are flying object and have wings. The new developed schema of Andrew is all flying objects with wings are animals. When he observed the butterflies, he noticed that butterflies are flying objects that have wings. Moreover, he thought that butterflies are also animals because they have similar features of birds. At that moment, he did not have any information of insect. This is the reason why he looked confused. This is the process of schema of Andrew.

For the stage of assimilation, it is a concept that helps absorb and evaluate new information. Based on the Piaget’s Theory, he believed that we experienced more to learn new information and assimilate into our prior knowledge and the existing world. Assimilation helps updating children’s knowledge base. It is an important stage for child development. For example, young child may learn mathematics in kindergarten. They will learn some basic principal such as the concept of zero, counting on and counting down. Children keep updating their mathematical knowledge when each skill was taught. Assimilation keep running in their mind in order to absorb the newly formed information. According to the provided case, Andrew thought that butterflies are similar with birds and under the category of animal. During the lesson, Andrew

was listening the story of animal. When the picture of bird was shown, he could recognize correctly. In the moment, he knew that living organisms with wings and small are bird and is an animal. After teacher's praising, he confirmed that thinking. When the butterflies existed, their features were totally similar with birds. Since Andrew knew more, he assimilated this information into his prior knowledge. Therefore, he classified butterfly into the category of animal too. Assimilation took place. Although the new experience can incorporate into Andrew's existing theories, it is a wrong assimilation. This is because butterfly should under the category of insect instead of the animal. This is the process of assimilation of Andrew.

The cognitive processes with reference to the case has been made clear in the foregoing paragraphs. They are schema and assimilation respectively. In the following paragraphs, I am going to introduce an intervention practice in order to encourage Andrew's cognitive development. It is an activity that identify the dissimilarity between animal and insect through the colourful pictures.

For the beginning, the education of animal and insect. Since Andrew was just 5, we can provide some basic ideas of the difference between animal and insect. The most common type of animal is mammal. Mammals are usually born a baby. They feed their baby with milk from their breast. Besides, animals are usually with hair and fur. On the other hand, insects are usually lay eggs. Sometimes, they will lay hundred even a thousand. Insects are without any hair and fur. They usually have three pair of legs. Also, insects are divided into two part. The head and the main body part. The difference between animals and insects is quite obvious. In order to increase Andrew's attention and memorize his knowledge, I will provide a direct teaching. During the practice, I am going to show Andrew a series of pictures of animals and insects with the following characteristics. For the animals, the most commonly are giraffe, zebra, sheep and lion. For the insects, the most commonly are butterfly, mosquito and spider. This is details of the intervention activity for Andrew.

Through showing the pictures and images, these will attract Andrew's attention and memorize his knowledge. Because of the wrong assimilation of Andrew, an accommodation is required. When the experiences introduce the information that not suitable with the current schemas, we need to create a new schema or modify the old one. Children shift assimilation to accommodation. The old schema of Andrew shows the all flying objects with wings are animals like birds. He does not know that butterfly is under the category of insects. However, we need to update his existing schema and produce a new category of insect for butterfly. Through teaching, we can point out the difference and provide a correct way of thinking. In this moment, teacher need to mention the fault that not every flying object with wings are animals. Animals are usually with hair while insects are not. Animals born a baby and feed them with breast while insects are lay eggs. Through the extremely contrast, the differences of the characteristics between animals and insects are obviously showed. Accommodation is a main process of children's cognitive development when the wrong assimilation occurred. This can prevent the disequilibrium. It is a cognitive discomfort. That's means the wrong assimilation continuously affects children's daily life but the accommodation does not take place. Through teaching, it can accommodate the wrong assimilation in order to take a balance. Equilibration occurs. A process when disequilibrium occurs, children organize their theories to return to a state of equilibration. In addition, the direct teaching is needed. Direct teaching is a suitable method for children to learn the particular notion and expertise. This can increase the response rate and interaction between teacher and children. Teacher can understand what is happening to the child and provide the most suitable solution to help him at once. This is the reason why the

direct teaching is used.

The details of intervention practice to encourage Andrew’s cognitive development have been made clear in the foregoing paragraphs. In the following paragraphs, I am going to state and elaborate the roles of teacher in the above proposal.

“When you get, give. When you learn, teach.” — Maya Angelou. As a kindergarten teacher, we all are a role model of children. We are important for children’s growth. We are more experienced than the children. We should use our prior knowledge with the personal experiences to apply into the teaching method. Most kindergarten students are usually between 3-6 years old. It is a major period for them to absorb the new things. It may affect their further development. Besides, children cannot define what is right or wrong at that period because they are still a young child. They believe what we say whether it is correct or not. Therefore, we are responsible to provide a precise way of critical thinking for those children. Teacher need to elaborate the concept to children clearly. Teacher also as a leader that guiding the children. Take an example of the process of accommodation, we need to indicate the mistake to create a new schema and alter the old one. If we do not, the wrong assimilation continuously affect children and lead to disequilibrium. A cognitive discomfort. Refer to the provided case, Andrew do not know the category of animal and insect respectively. If we do not specify the problem, Andrew will confirm the butterfly is under the category of animal. A misunderstanding is then occurring. It will become more serious if the misinterpretation is not be treated. We need to explain that animals are usually with hair and fur while insects are usually with many pair legs. For animals, zebra, lion, sheep and bear are well-known. For insects, spider, bee, butterfly and ant are well-known. This is the role of the teacher in the designed proposal.

In sum and in short, the cognitive processes of the provided case has briefly evaluated. They are schema and assimilation. The intervention practice that encourage Andrew’s cognitive development has explained in details in this essay. Images of different animals and insects are prepared for Andrew to classify. The role of teacher also stated in the foregoing paragraphs.