CHAPTER 5 DISCUSS

5.1 A Cooking set

From the cooking set experiment, the result showed that children were able to refer an abstract object to a real thing. For example, children were able to refer kitchen toys to real things and indicated four types of pig, illustration when the researcher asked them to compare. However, they usually played with a cartoon character pig. If their parents did not recommend them to play with pork (the illustration that look like real meat.) This notice agrees with what Acredolo explained why kids love animal cartoons. (Acredolo, 2001)

Moreover, the children were able to play step by step. When there was a missing object (a gas stove), they skipped a missing object and continued to play but it was different from a pepper bottle (see Figure 4.63). They pretended to use a pepper bottle like when there was pepper inside the bottle (see Figure 4.64). These results can be explained by assuming that if the object lacks 100% completeness, children are not able to refer to the real thing and then they imagine of the missing elements. Nevertheless, if the object lacks about 10% completeness, children are able to pretend their play by using imagination. When the researcher provided a missing object back to the test, they were able to refer to real thing and used an object for the play. This is an interesting point that some children were not able to figure out a side view pan. It was obstacle for the play. The researcher or parents had to suggest them. However, when the researcher provided a top view pan to children, it was easier than a side view pan. It is unlike

Liben's experiment that shows some parts of photographs of the same scene that had been taken from different view angles. Children indicated that all pictures were the same but they were not able to explain what the difference is. They focused on what was represented but they did not concern about the object. In contrast, the result from this research showed that children focused on the object but they less concerned with what was supposed to represent.

However, if the missing object is a key for role-playing, the children would select other objects instead of the missing objects. For instance, the researcher asked the children to make a fruit smoothie without any fruit ingredient. They used a cartoon or an egg for making a fruit smoothie (see Figure 4.12, 4.13, and 4.14). Moreover, children aged 3 to 4 years old were interested in detail of objects more than the object that represented something. For example, a girl tried to hold a blending machine up right and put a spatula into a handle of blending machine (see Figure 4.11). These findings imply that children focus on the objects and are less concerned with what objects represent. On the other hand, the children aged 4 to 6 years old are not interested in details. One reason could be that young children lack the understanding of symbol reference. Children aged 4 to 6 years old are able to understand symbol reference more than young children.

An interesting case is that children were confused with the decreased salience of fruit & vegetable ingredients (see Figure 3.7(a)). They were able to refer some fruit & vegetable ingredients to real things such as an orange and a grape. They were not able to indentify an apple, a tomato, a hand of banana, and a mango. When the researcher provided the increased salience of fruit & vegetable ingredients (see Figure 3.7(b)). There were able to refer to real thing. The researcher asked the decreased salience fruit

& vegetable ingredients again (see Figure 3.7(a)). Consequence, the children were able to refer to real thing. These results can be explained by assuming when they accommodate new information or label the object. They assimilate their information of the object. When the researcher asked them back to the previous experience of the object, the children were able to assimilate the framework of the object. This result is the same as Piaget's stages of cognitive development called assimilation and accommodation (Piaget, 1983) (see Figure 5.3).

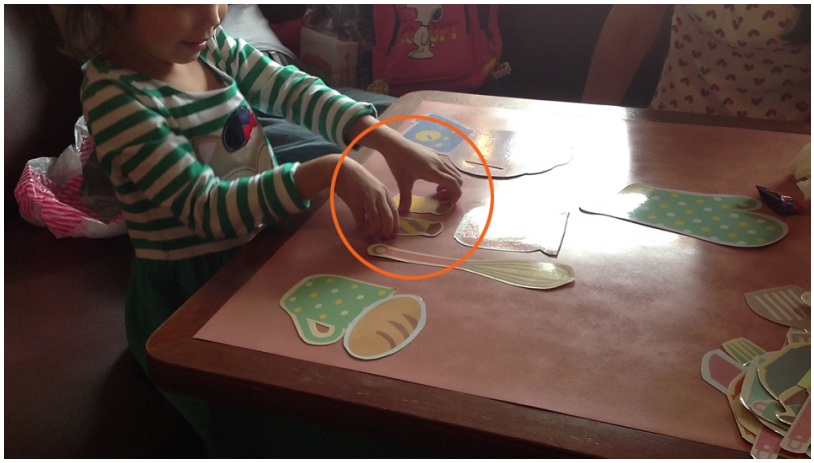

Figure 5.1 Playing with two pepper bottles

Figure 5.2 Pepper bottle role-play

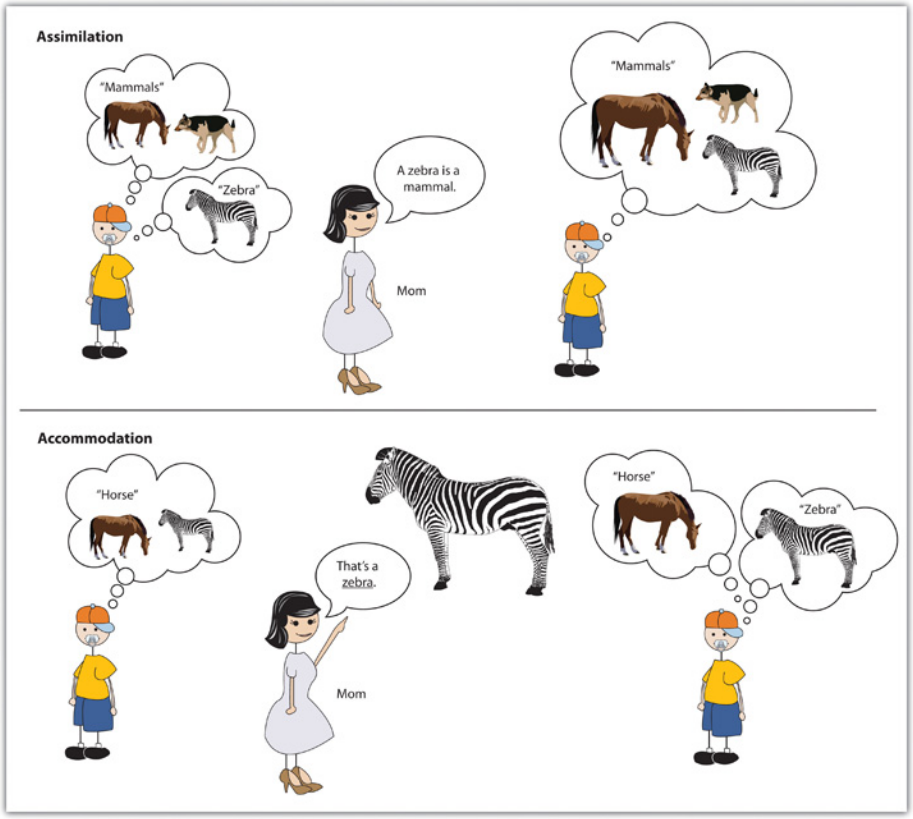

Figure 5.3 Assimilation and Accommodation Theory

(Source: Piaget, 1983)

5.2 A Carpenter set

Using constructive toys with 3 to 6 years old children processes the experiment of imagination. The result shows that children can be classified into two groups according to their rubric outcome.

Group 1: Children aged between 3 to 4 years. This group of children is interested in detail of toys more than playing with the constructive toys. They focused on the object itself and paid less attention to what object is represented. For example, a 3-year-old girl drove screws by a screwdriver (see Figure 4.27). A 4-year-old girl rubbed a screw

sign on a wood board (see Figure 4.32) and tried to squeeze a combination cutting (see Figure 4.33)

Group 2: Children aged between 4 to 6 years old. This group of children has a constructive skill according to the theory of learning road map by Wellhowsen and Kieff (2001). Although the theory of learning road map refers to 3D objects, 2D objects were applied in this experiment. As a result, it expresses that children were able to refer to real things and this result is in line with the theory of learning road map as well. For example, children started to create a structure that was symmetry and they inserted other toys into the structure (see Figure 4.34 and 4.38)

The remarkable point is that children aged between 4 to 6 years old (Group 2) have a variety of imagination. Some children built home according to their own imagination which differenced from traditional home. Some children took characters into their homes as a screen play (see Figure 4.31 and 4.37).

5.3 A Medical Doctor set

According to the development of children's understanding of the relation between scale model and their referents (DeLoache, 2000), children aged 2.5 years old failed to find a hidden toy in a real house when they compared with a small house model. Children aged 3 years old were able to find them but they did not understand completely.

From this experiment it was found that children 3 – 6 years old understood scale and symbol reference. They were able to refer to real things, even though the scale of object was bigger than the real thing. In addition, big-scaled objects affected to children's

imagination as they enjoyed and got excited to play with a big scale object. These results show that the big scale is good for children's imagination.

5.4 Exclusive Conclusion

The dual representation theory leads an author to infer that children aged 0 to 2.5 years old lack the ability to distinguish an abstract relationship between space and symbol representation. They learned from the event that they notice the object or considerate it. 3 to 3.5 years old children had less connectivity to the symbol representation. The manipulation of salience affected the way children understand symbol. If an object was manipulated to decrease the salience of the symbol as an object, it should increase children's linkage to an object as a symbol. In contrast, if an object was the salience of a symbol as an object, it should decrease children's linkage to an object as a symbol.

3 to 6-year-old children are able to refer an abstract paper toy to real things but the abstract paper toy should not act as guideline too much in details until the children are not able to refer to the real thing. If the object lacked 100% complete and the object is not a key for play, the children will not refer to an object as a symbol. However a missing object is a key for play, the children will use their imagination to solve the problem. Therefore, the completeness of an object and an importance of an object are significant for children's symbol reference and imagination.

However, children are able to refer the decreased salience object by assimilating new information of an object. They are able to accommodate the object and refer to the real thing. Therefore, the symbol reference will succeed. These cases relate to assimilation and accommodation in the Piaget's theory.

According to learning road map theory by Karyn Wellhosen and Judith Kieff, they described the constructive play like a 3D block. From this research, children use their imagination to construct abstract toys. They understood symbol reference, although the objects are 2D objects. They had constructive skills as same as the learning road map theory.

Furthermore, big scale objects affect to imaginative development of children because when children are enjoyable, fun, and excited, the limbic system opens up and absorbs new information and knowledge.

This study has been conducted in Bangkok, Thailand. The children came from middle-class-socioeconomics status households. They have had many toys in their houses and some toys similar to the tested objects, 3D. It is possible that the experiment will have a different result from children who live in rural area and have fewer toys in their houses. The approach outlined in rural area shows that children who lack toys in their houses can use the paper toys instead. The low cost of paper toys would benefit the development of children's imagination in terms of economics. The future research could be a sophistication of the detailed design for toys and the dual representation concept that affects the children's imagination.