

CHAPTER TWO

REVIEW OF LITERATURE

This chapter reviews the literature in five main areas along with a conclusion: (1) Brain development, (2) Brain's Plasticity, (3) Curriculum for effective learning, (4) Gardner's Theory of multiple intelligences, and (5) Relevant study.

2.1 BRAIN DEVELOPMENT

According to Heterington and Parke (2003, p. 180), brain development in the infancy period grows drastically; for example, a newborn infant's brain weighs only 25 percent of an adult. A baby's brain becomes half of an adult brain weight within six months, and 75 percent of an adult brain when they are 2 years old. A baby's brain grows in rapid pace and results in development of their sensory perception, motor abilities, memory, and other specific functions: seeing, hearing, moving, feeling emotion, thinking, and speaking.

Hughes (2002, pp. 127-130) stated that at birth a baby's brain has billions of nerve cells called neurons which consist of dendrites, axons, synapses, and glia. The dendrites of each neuron play an important role in brain development since they are used to communicate and transmit all information among neurons from the brain to control the rest of the body. The connections between neurons are known as synapses. The importance of neurons and synapses are related to brain development in the following abilities: body movement, body sensations, perception, vision, understanding of spoken language, coordination, hearing, verbal memory, speech production, and decision making. However, half of neurons at birth die during early development if the interconnections among them are low. The neurons with proper stimulation level will grow stronger and reflect the rapid development in the brain and their physical growth. The important period of brain development is the first three years of life since these neurons are sensitive to children's experiences. If children at birth to three years old do not get the necessary stimulation at an appropriate level, the brain's amazing ability will be permanently damaged.

As Kieff and Casbergue (2000, p. 7) point out, play during early childhood years is crucial for brain development since connections among neurons are formed

while children play, interact with parents, and explore their environment. Lack of experiences during this crucial period will result in underdevelopment of physical, cognitive, and emotional abilities.

2.2 BRAIN'S PLASTICITY

Heterington and Parke (2003, p. 187) indicated that stimulation from environment plays an important role in brain development. Human brain's plasticity, the responsiveness of its neural structures and functions from external environment, will result in brain development, strengthening the synapses and modifying brain chemistry to improve the brain's overall efficiency. The enriched environment can stimulate more new learning experiences for children than an impoverished and unresponsive environment, so new learning experiences will enhance the complexity of neurons, the number of dendrites, and neural branches for effective message transmission. While the enhancement of brain development comes from environmental stimulation, lack of stimulation will damage the brain or cause malfunctions such as hyperactivity and impulsive behavior.

2.3 CURRICULUM FOR EFFECTIVE LEARNING

Kieff and Casbergue (2000, pp. 45-48), point out that an appropriate curriculum should be designed to foster children's cognitive, motor, social, and emotional growth and well-being through planned, incidental, and spontaneous learning. A teachers' role in effective learning is planning the context of learning, creating an interesting learning environment, engaging and interacting with children, assessing and recording children's learning to achieve knowledge, skills, and dispositions goals.

2.4 GARDNER'S THEORY OF MULTIPLE INTELLIGENCES

Children's intelligences are not measured by IQ tests only since individual children are born with some intelligence which can not be measured in terms of a numeric score as IQ (กรณี ฐิติสิทธิ์, 2537, น. 48). Gardner's study (as cited in Heterington & Parke, 2003, pp. 418-420) proposed a theory of multiple intelligences. This theory

suggested that each individual can perform their own talents or ability better than others which is called intelligence. Gardner's Theory of multiple intelligences has eight aspects as follows:

Linguistic: The ability to understand language and be fluent to use complicated words to communicate with surrounding people such as poets, teachers.

Logical-mathematical: The ability to understand the abstract and identify problems and seek explanation such as mathematicians, scientists.

Spatial: The ability to visualize objects, transform perception, and recreate visual experiences into images or pictures like artists, and engineers.

Musical: The ability to recognize musical tones, combine tones and phrases into rhythms and structures such as musicians, composers.

Bodily-kinesthetic: The ability to express feeling through body and handle objects skillfully such as dancers, athletes, actors.

Intrapersonal: The ability to access one's feeling, emotions, and understand behaviors such as novelists, psychotherapists, actors.

Interpersonal: The ability to notice and distinguish others' moods, intention, temperaments such as political or religious leaders, parents, teachers.

Naturalist: The ability to identify the different life forms and species and the relationships between them such as biologists, naturalists.

2.5 RELEVANT RESEARCH: A SURVEY OF PARENTS' OPINION ON ENGLISH LEARNING AT KINDERGARTEN LEVEL

Srichol Nakmai (2006) studied the opinions of parents on English learning at the kindergarten level. She found that most parents were willing to see their children learn English as soon as possible but they expected their kids to be familiar with their English and aware of multilingual society, to memorize English vocabulary rapidly and easily. Most of the parents (89.2%) agreed with the idea of learning English at kindergarten level. They believed that learning English in kindergarten would help children to learn English vocabularies faster and help them to pass primary school entrance examination. Most parents believed that learning English at kindergarten level will increase children's intelligence and communication skills. However, they still believed that proper contents must be delivered through proper teaching methods

otherwise children would become unwilling to learn English as they grow up. Besides, the researcher stated that only English learning program for kindergarten children could neither improve the learners in terms of intelligence nor reflect individual differences.

In conclusion, the study shows that most parents preferred to provide the education to their children at an early age so that their children will become fast in learning and more competitive when they take further educational levels' entrance examination. Besides, they believed that the early learning of English will result in children's intelligence and communication skills but effective learning relates to the following factors: well-designed curriculum, proper teaching methodology, attractive learning atmosphere including the readiness of learners and their interest. Moreover, most parents have the opinions that the major purpose of early learning is not academic achievement but to provide the opportunity for children to gain new experiences, develop their new skills, and be familiar with multilingual environment.