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STIMULATION OF CHILDREN BRAIN
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ABSTRACT: Child's growth and development is very much determined by the stimulation patterns built by the environment. Before the modern science is developed, the Balinese Hindu community made an effort to stimulate the optimal functioning of the brain through the variety of ceremonies called the *Manusa Yajna* ceremony. The actualization of the *Manusa Yajna* ceremony is a form of the seriousness of Hindus to invest in human resources. This means that when this ceremony was built and developed, the spirit to prepare Hindus to be superior had already taken place. However, along with the changing times, the *Manusa Yajna* ceremony is interpreted as an obligation relating to human debt to God, Ancestors and Saints (*Tri Rna*). Its implementation is laden with ceremonial facilities and infrastructure, without understanding the educational process provided to parents to stimulate the development of a child's brain. This research is focused on analyzing the *Telu Bulanan* ceremony as one of the important ceremonies of the *Manusa Yajna* ceremony. The study took the Denpasar community setting with a qualitative approach.

KEYWORDS: Brain Maturity; Early Childhood Education; Telu Bulanan Ceremony

I. INTRODUCTION

Human brain and cognitive development are very dependent on the stimulation and nutritious food provided since the first year of birth. The human brain is divided into two functional categories, namely the part of the brain that functions as a communication channel and the part of the brain that functions to think and regulate the body's mechanisms (Hagins & Rundle, 2016). Providing stimulation during childhood is a very important activity to maximize the function of the brain. Lack of stimulation in certain aspects will have fatal consequences, namely lack of ability in aspects of development that are not stimulated, for example, lack of vocabulary, poor motor skills, or difficulties in body movement (Martani, 2012). Before modern science developed, efforts to stimulate children's growth and development have been done through patterns of habituation, habits, traditions or myths about childcare guidance (Liliani, 2015).

In the study of the mythical structure in Indonesia, it was found that the patterns of child care, inherited from the ancestors, are mostly permissive (Liliani, 2015). In Bali itself, there are a number of myths related to parenting, but references that are often used in parenting activities are references that originate from religious values, one of which is the *Manusa Yajna* ceremony. Knowledge about care is learned through the ceremonial processes and analysis of supporting facilities and infrastructure of the ceremony itself.

Manusa Yajna is part of the teachings of the *Panca Yajna*. This teaching is the actualization of the three basic frameworks of Hinduism, namely *tattwa* (religious philosophy), *susila* (religious morals) and *upacara* (religious ceremonies) (Griya, 2004). *Panca Yajna* teachings consist of 1) *Dewa Yajna* is a ceremony addressed to Ida Sang Hyang Widhi Wasa and His manifestations, 2) *Pitra Yajna* is a ceremony intended for the worship of ancestors and purification of spirit / soul, 3) *Rsi Yajna* is a ceremony related to priest, 4) *Manusa Yajna* is a ceremony that aims to purify and develop human resources, and 5) *Bhuta Yajna* is a ceremony intended for *bhuta*; the harmony of humans and their environment.

In its implementation, the spirit of the *Panca Yajna* ceremony is always associated with three human debts in life called *Tri Rna*, debt to God is called *Dewa Rna*, debt to *Rsi* (Priests) is called *Rsi Rna* and debt to ancestors is called *Pitra Rna* (Sidemen, 2017). Therefore, it is believed that if the *Manusa Yajna* ceremony is not carried

out, humans will experience difficulties in their life. This belief has strongly influenced the beliefs of the Hindu community in Bali. Thus, the main function of *Manusa Yajna* ceremony which full of patterns to stimulate children's growth and development are neglected.

The *Manusa Yajna* ceremony which must be carried out by parents relating to the stimulation of growth and development of children includes: 1) *magedong-gedongan* (ceremony for the baby in the womb or during the pregnancy), 2) *rare embas* (baby born), 3) *Kepus Pungsed* (umbilical cord removed), 4) *roras raina* (12 day old baby), 5) *abulan pitung dina* (42 day old baby), 6) *telu bulanan* (3 month old baby), 7) *otonan* (six-month-old baby ceremony, or every 6 months of age), 8) *Magetep bok* (cutting hair ceremony), 9) *ngendagin* (baby teething), 10) *upacara ganti gigi*, 11) *upacara raja sewala* (puberty), 12) *upacara mepandes* (tooth filing ceremony), serta 13) *upacara wiwaha* (wedding ceremony) (Ida Pedanda Gde Nyoman Jelantik Oka, 2009). In some areas in Bali, this *Manusa Yajna* ceremony has various forms of implementation, and there are several ceremonies which become one of the priority ceremonies, according to *desa* (place), *kala* (time) and *patra* (pattern). Apart from these differences, the implementation of this ceremony routinely shows that Hinduism views the importance of investing in human resources, through the implementation of the *Manusa Yajna* ceremony.

It is important to study the knowledge contain⁶ in the *Manusa Yajna* ceremony as a form of stimulation of children's growth and development. Therefore, this study aims to analyze the form of stimulation of growth and development of children in *Manusa Yajna* ceremony, especially in *Telu Bulanan* ceremony, in terms of its relation to the development of the children brain functions. The results of this study can be used as an improvement and reference related to childcare patterns.

II. METHOD

The object of this research is a *Telu Bulanan* ceremony. The data were collected through observations, literature study and document study. Observations were taken place at the *Telu Bulanan* ceremony carried out by the Balinese Hindu community living in the Denpasar area, analyzed with the brain development theory of educational neuroscience perspective as well as cognitive theory from Piaget. Data validity was tested by matching data from observational studies, documents and literature.

III. RESULTS AND DISCUSSION

A. Brain Maturity

The part of the body that holds the control function is the brain. The part of the brain that functions as communication is nerve and acts as a connecting cable between parts. The process of communication between parts of the brain is done by nerves / neurons. The brain develops from a single cell which then develops into 100 billion nerve cells at birth. But in infants, nerve cells do not yet have adequate connectivity. Connectivity between nerve cells is what allows cognitive processes in the brain. This connection is actually a small gap between nerves, chemical messages between nerves will "jump over" this gap, so that communication can occur between nerves. This connection in medical science is called synapse. The brain will slowly build connections between nerve cells / synapse in line with the maturity of the child's age, stimulation provided and nutritious food that is eaten (Wathon, 2016). If the cell successfully builds a connection properly, then the maturation of brain functions will occur. In general, the maturity of brain function is divided into four main phases, namely: 1) *sensory*, 2) *sensory motor*, 3) *perceptual motor*, and 4) *cognition*. This stage of maturation is described in a learning pyramid, where the first phase is the foundation of brain maturation in the following phases

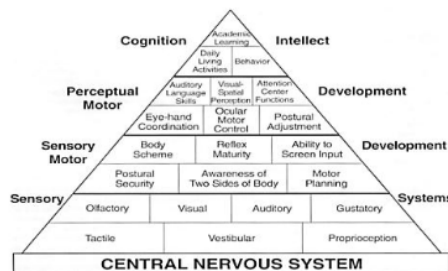


Figure 1-3. Printed with permission. © Taylor/Trott 1991

Figure 1. Learning Pyramid

Source: <https://otplan.com/pyramid-of-learning/>,2019.

Central Nervous System has a duty to process data received through the senses, so as to produce a response. Sensory System is an intermediary system for the brain, so that stimulation that enters from outside and inside the body can be delivered properly to the brain. If this system is damaged, the brain has difficulty in processing all the information from the stimulation that comes in, there is even a possibility that data cannot enter into the brain. Body awareness and motor planning, at this level there is a situation of coordination between sensory (senses) and motor (motion) such as balance, or coordination between the hands and feet. Eye and hand coordination and postural adjustment, at this level the child will be able to digest or understand something, the child can maintain attention, eye contact, eye-hand coordination. Focus, is the ability to do concentration, which is a combination of work between the senses that are well trained. Daily living behavior, is a condition that children can learn independently. Academic readiness, is the culmination of a process of maturity that is demonstrated by the child's ability to learn optimally (Jellinger, 2004).

The brain process, in accordance with the review of the central nervous system, is at the peak of the pyramid of learning. It means that the theory of mind, as part of metacognition, is related to intellectual abilities. In the learning process described by Piaget about intellectual development, there is a development that occurs within a certain period, so that intelligence can be developed through stages that are interrelated or related, and each of these stages determines its development (Fitri, 2017).

B. *Telu Bulanan* Ceremony

The efforts to stimulate the growth and development of children are actualized in a ceremony, one of which is *Telu Bulanan* ceremony. *Telu Bulanan* is led by a *Pemangku* (priest), which is usually carried out in the yard (*natah*). *Upakara* (ceremonial tools) are placed on a small table or mat on the ground. Before the ceremony took place, the baby and the person who took part in the ceremony sat behind the leader of the ceremony, then *dadap* leaves, thread and white cotton were prepared. The stages in *Telu Bulanan* ceremony are: 1) The baby's father and mother *mebeakala* with the aim of eliminating *leteh* (dirtiness) after giving birth. 2) *Nyama bajang* and *kandapat* (four brothers such as amniotic fluid, placenta, *lamas* and blood are "invited" to be given offering as a thank you for caring for a baby from the womb until the birth safely. 3) Baby's hair will be cut for the first time termed as a "*mepetik* ceremony ". 4) The baby is allowed to enter the holy place in *Sanggah Pemerajan* and set foot first on the ground in front of *Sanggah Kemulan*. 5) Babies receive the offered offerings of *Hyang Kumara*, the manifestation of *Hyang Widhi* who protect babies.

The symbols used in the *Telu Bulanan* ceremony: *Regek* is the woven 108 pieces of ivory coconut leaves in human form, as a symbol of *Nyama Bajang*; *Papah* is the base of the ivory palm leaf stem as a symbol of *ari-ari*. *Pusuh* is the banana blossom as the symbol of blood, *Batu* (stone) as the symbol of *yeh nyom*, *Blego* as the symbol of *lamas*, chicken as the symbol of *atma* (soul), a broken clay pot as a symbol of the womb that have given birth to a baby, *lesung batu* as a symbol of strength of *Wisnu*, *pane* (basin of clay) as a symbol of *Windu* (*Hyang Widhi*), water inside the *pane* as the symbol of *akasa* (the sky), ladder made from yellow sugar cane along one *hasta*, given steps made from three *dapdap* trunk as a symbol of *Smara-Ratih* (*Hyang Widhi* which gives a gift to husband and wife). The monthly *telu* ceremony also aims to give thanks to *Hyang Widhi* for the gift of long life, and pray for safety and healthiness.



Figure 2. Stepping on the ground stage of *Telu Bulanan* Ceremony

C. The **Stimulation of Children Brain Development in Telu Bulanan Ceremony**

The *Telu Bulanan* ceremony held by the Balinese Hindu community is a ceremony that aims to educate parents, in an effort to carry out parenting activities in accordance with the central nervous system paradigm. At this age, stimulation carried out to infants is related to stimulation of sensory and motor sensory abilities. Sensory ability related to stimulation of the sense of taste, sense of touch, sense of sight, sense of hearing, sense of smelling, balance control, and body posture. In this ceremony, the baby is allowed to go down to the ground, the most distinctive marker of this ceremony is that the baby is allowed to use gold or silver jewelries. During this ceremony the baby is also put inside a chicken cage and then, someone will release a hen and a cock. In this phase, the baby begins to learn to follow objects using their eyes, the release of chickens in this ceremony shows a stimulation of the sense of sight using the media of chickens (moving creatures). From this age, children are introduced to the objects or living things that have various patterns of movement. The more diverse objects or living things that move, then the maturity of brain function in the sensory of vision will be better.

In addition, in this phase the baby is also stimulated to respond to the rhythm, music and singing make the baby moves, shakes the body and even makes sounds like mumbling. At this ceremony, stimulation is carried out by using bracelets and jewelry that can cause sounds when the baby's feet and hands move reflexively. The senses stimulated by the use of this bracelet are the hearing senses.

The ceremony is also marked by the baby steps down to the ground for the first time, the baby will be seated on a mat with or without help. Stimulation carried out at this stage is the control of the balance and posture of sitting babies with their backbones that start perpendicular. Another stage of this ceremony is the activity of putting a baby's hand into the water that contains animals that live in fresh water such as fish, snails, and so on. Stimulation that is done is a form of fine motor stimulation, the baby will begin to learn to raise his hands and play his hands in the water, reflexively grasping, opening and closing the palms, touching, reaching objects with palms and hitting objects around him. While playing with water, language skills are stimulated, the baby will react to the movements made while his hands are in the water, and start learning to babble, even though it is not clear, see Figure 3.

The educational process that takes place in the *Telu Bulanan* ceremony is closely related to efforts to stimulate the growth and development of children and the maturity of brain functions. By doing this phase of stimulation, efforts to optimize cognitive abilities have occurred. The stages of learning or thinking described by Piaget will be carried out properly if the sensory nerves can work optimally. Efforts to obtain information / knowledge can be recorded properly in the brain, when many sensories work in the process of acquiring knowledge. For example, when we learn about apples, then we will be able to describe the apples well if we have seen it (the sense of sight), tasted (the sense of taste), had held (the sense of touch), and had smelled (the sense of smell). Our knowledge about apples will be complete. If one of the senses is not functioning, we can still be able to identify apples with other senses that are still active. But if only one or several senses are stimulated, the child will experience obstacles in recalling memory / knowledge that has been stored. Therefore, sensory nerve stimulations must be done completely from an early age.

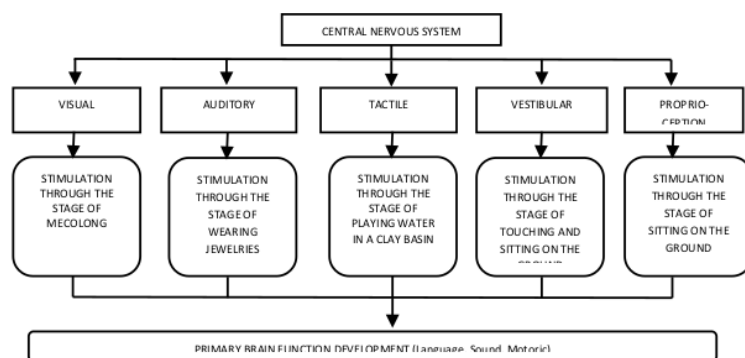


Figure 3. **Stimulation of Child Brain Development in Telu Bulanan Ceremony**

Nowadays, children are categorized into Z and Alpha generations, where the childcare process of Z and Alpha generations has been exposed to technology since childhood. The dominant senses stimulated through gadgets

are the senses of sight and hearing. If parents do not provide activities to stimulate other senses through a variety of activities provided at home, other senses will be less stimulated. This condition can certainly be a barrier to learning for children, because at a higher level of learning, children need learning readiness in the form of their own cognitive and sensory abilities, to respond to various stimuli provided by the environment. Therefore, the meaning of this *Tiga Bulanan* ceremony must be conveyed to parents, in order to improve parenting according to the needs of children. So that, the child care will be done effectively, and have an impact on children's readiness to follow the learning process at a higher level.

IV. CONCLUSIONS AND SUGGESTIONS

A. Conclusions

Telu Bulanan is one of the *Manusa Yajna* ceremonies held by the Hindu community in Bali. This ceremony contains symbolic communication in the form of education related to the stimulation of the development of a child's brain at an early age. The stimulation carried out at this ceremony is related to the stimulation of sensory nerve function which includes the senses of vision, hearing, smelling, balance, touch and body posture. These stimulations occur at every stage of the ceremony such as the stepping on the ground, the use of jewelry, the release of chickens, the stage of the baby playing in a clay basin, until the stage of the baby sitting on the ground. This ceremony is a form of education aimed at parents, to stimulate the maturity of the child's brain function by carrying out the nurturing activities that are implied in the *Telu Bulanan* ceremony continuously.

B. Suggestions

The *Telu Bulanan* ceremony is one of the *manusa yajna* ceremonies which are carried out and believed to be influential in the development of children. However, some parents lack understanding of implied values, which provide information about care procedures and stimulate child growth and development. This meaning must be conveyed to the implementers of the *telubulanan* ceremony, so that the purpose of the ceremony is not only to have a religious meaning, but also as an educational medium for parents in caring for children.

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