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THE OPTIMAL AGE OF THE SECOND-FIRST LANGUAGE ACQUISITION: THE RELATIONSHIP OF LANGUAGE AND PHYSICAL-MOTOR DEVELOPMENT

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ABSTRACT

This research highlighted the language and physical-motor relationship and aimed to find the optimal age for the beginning of the second-first language (2L1) acquisition. The respondents of this research were 50 millennial generations of Chinese families whose children were 0-5 years old. Some children could communicate in Chinese and Indonesian language. Chinese-Indonesian families were chosen by considering their bilingual. This research employed qualitative data which were collected from observations and questionnaires given to parents. The collected data were analyzed by classifying the data into some specific intervals of age based on the language milestones. This research finds that the highest frequency of the beginning in the simultaneous second-first language education is at 13-15 months. This research also proves that the age between 13-15 months is an optimal age to begin educating the second language regarded as the first language for bilingual families.

Keywords: *optimal children age, second-first language acquisition, physical-motor development*

INTRODUCTION

The millennial Chinese-Indonesian generations refer to them who born in the millennial era (1980-now) (Ali & Purwandi, 2017). Most of them maintain their heritage language as their mother tongue. As a result, they have to master at least two languages; Chinese and Indonesian language. Thus, the millennial generations of Chinese are bilingual because they maintain their culture and language, and acculturate into the culture of Indonesian-speaking indigenous local society. For this reason, the millennial generation of Chinese parents should educate their children with two or more languages from an early age.

An interesting aspect that needs to be highlighted is the way their children acquire both languages simultaneously because they never fail to raise their children to become a bilingual Chinese-Indonesian at an early age.

In the acquisition process, McLaughin (1978) in Nau (2014) has stated that there are two processes of language acquisition in bilingualism, namely simultaneous and successive (or consecutive) acquisition. The simultaneous process is a process when an infant learns two or more languages before three years old (Nau, 2014). There is no first or second language in this process. Both languages are regarded equally. The second language is acquired as the first language due to their universality. Over time, children acquire the first and the second language as a native speaker. The researcher assumes that the parents educate their children who are still in the early age with Chinese first as the first language (1L1) and Indonesian language as the second language (2L1 – The second-first language acquisition) simultaneously.

Bilingual language acquisition is similar to the acquisition of one language only. The 2L1 acquisition adopts the 1L1 acquisition methods, like analyzing, comprehending, and others. However, the 2L1 acquisition process is started by acquiring words and word formation and moving to its meaning. As a result, children can develop their 2L1 by learning words from others. This simultaneous acquisition does not mean that the process of acquiring two languages exists since birth collectively. However, there is still one language which is acquired first than before. One will precisely become the 1L1, and the other is the 2L1. Their 1L1 is acquired in the home environment, and

their 2L1 also begin to be acquired at home although it is more developed in other environments such as outside of home or school. Their language experiences in different environments play a substantial role in 2L1 development (Berman, 2017). A different language in different settings attracts them, and they can identify the different vocabulary in each language learning setting. Adults in a society must engage the children in challenging and meaningful activities to foster their cognitive development intentionally and systematically.

This situation is possible because children have the intellectual (cognition and language) capacity and competence to acquire two or more languages. Since newborns, children will not fail to differentiate two languages although it proves an intermediate pattern of preference. It is because children can construct and develop their cognition as well as manifest behavior according to the first and second language. Therefore, it implies that language development goes along with the dynamic interaction of cognitive development and the environment (Blommaert, 2016).

Children begin to construct their language from 0 to 5 years old. The age between 0 to 5 years old (from baby to the beginning of childhood) is said as the critical period and the important period that the children's physical-motor, cognition, and social develop quickly. Many psychologists and linguists declare that the period of 0-5 is a critical time because it is the foundation of children's growth and development. At this critical time, they begin to be responsive in facing any stimulus from the environment. Over the age of 5, children's cognition development starts to slow, and it affects language development as well. They do not have a chance, time, or freedom in muscle as well as the nerve to reach or achieve their second language at over 5 years. Therefore, children who have been educated the second language since early age may become a bilingual like a native speaker.

In the first year, children become a native language specialist as their ability to recognize and identify foreign language sounds does not develop yet (Ramirez & Kuhl, 2017). However, it increases the native language sounds. Thus, the range of 12-24 months can be declared as the critical age of language acquisition because this period is the basic thinking period. In addition, children have already produced language (one to two words). It can be concluded that the period of 0-24 months is a pre-school time that becomes important and crucial. At this period, language develops very fast with no stop. After school time, children's cognition has developed to be complex, and the experiences they face are more significant. Then, their cognition will be separated that may cause any obstruction in comprehending a second language.

From the beginning of language development, children start to show their development by acting and imitating. Bandura (1989) in Keenan, Evans, and Crowley (2016) has argued that children's learning takes place primarily through observational learning or imitating. The child picks up words by overhearing other people and imitating their behavior. Children utilize adults' sentence as a guide in constructing their sentences (Meniado, 2016). When they get a stimulus, they will repeat it although the results of their imitating are in the incorrect form. Their incorrect form is a step of developing their language through their social interaction with parents (adults).

The cognition development has an association with social environment or interaction because the cognition will not develop without having interaction in a social environment, and cognition also follows physical-motor development. Therefore, thought (cognition), physical-motor, and social environment have a significant correlation to language. There is a strong relation between physical-motor and cognition development which is shown by most children in the world. Piaget (1952) in Libertus and Violi (2016) has declared that there is a relation between the motor and cognitive development and noted that infants' actions and resulting sensorimotor experiences are critical for their learning about the environment and the objects within it.

The age of achieving motor milestones may be an important basis for various aspects of later child development (Ghassabian et al., 2016). It explains that motor achievement provides language skills to develop. One of the emerging motor skills is sitting which has a significant effect on language. It is in receptive vocabulary around age 10 to 14 months (Libertus & Violi, 2016). Libertus and Violi (2016) have suggested that the onset of independent sitting may initiate language learning development. The onset of independent sitting and walking are also able to forecast infants' words and meanings comprehension.

The relation between the onset of walking is studied by Walle and Campos (2014). They have examined the relationship between language development and the acquisition of walking skills. Then, they have declared that the increase of infant exploration (the onset of walking) influences language acquisition and language development. The social environment differentially predicts the language development of crawling and walking infants. They have argued that the acquisition of walking predicts both receptive and productive language developments in the children. Associated with the onset of walking, productive language development has a greater relation than receptive language development. Unfortunately, in their research, they do not explain when the onset of walking is acquired and when the cognition, language (productive and receptive), and the acquisition of walking contribute to each other. As independent walkers, infants interact more with their mothers and produce more social communication.

Most parents' failure in raising their children to become a bilingual is caused by parents' ignorance of the relation between language and physical-motor development in educating the second language simultaneously. Recent research also demonstrates the relationship between motor skill and linguistic development (Libertus & Violi, 2016). Several of those researches claim that motor and language are independent and do not determine each other (Wang et al., 2014). Those researches also never discuss the optimal age for language development. Therefore, this research focuses on the optimal age in acquiring a second language simultaneously. It differs from the previous researches which discuss the relationship between language or cognitive and physical-motor development. The previous researches become a theoretical framework for this research.

For all of the reasons, the purpose of this research is to investigate the optimal age for parents to begin educating 2L1 by considering physical-motor development role. The researcher may think it is the main factor of language development due to the Chinese-Indonesian parents using the Chinese language as their first L1 and their home language. Moreover, this research is important to support bilingual families in Indonesia, indigenous, or immigrant like Chinese families in educating a second language to children.

METHODS

Chinese-Indonesian becomes the sample of this research due to their success in raising their children to be bilingual. The sample is taken from all members of the Chinese-Indonesian community in Palembang city, which is just aimed for Chinese people. Palembang city is chosen because it has a large Chinese population in Indonesia. All community members are interviewed according to the parents' language repertoire, and their children's language ability and development. Afterward, fifty (50) millennial Chinese-Indonesian families are chosen. These fifty families are the parents who educate their Chinese (heritage) language to their children as his/her first L1 and use the Indonesian language as his/her second L1.

The data are collected from questionnaires given to parents, and each parent is interviewed intensely according to their children language acquisition. The results of the collected data are qualitative data. Then, the collected data are analyzed by descriptive analysis by classifying them into five intervals of age. Those are 0−1 year, 1−1,5 years, 1,5−2 years, 2−3 years, and 4−5 years. The number of children per interval of age is not determined due to the main source of this research. The analysis applies the variable of the age of children and physical-motor development due to its significant relationship to language development.

RESULTS AND DISCUSSIONS

From the questionnaires, both the father and mother or one of the parents state that they focus and frequently communicate by using the Chinese since birth. Their children are accustomed to hearing the Chinese. Moreover, it is supported by the other members of the family such as grandfather and grandmother or uncle and aunt who also communicate by using their ancestor language (Chinese).

Besides that, all of the Chinese parents believe that their children must also be accustomed to the Indonesia language from an early age. When their children have social interaction in their environment with indigenous people, their children can communicate. Chinese parents add that if they have not taught Indonesia language or they have educated their children over 5 years, their children will experience hardship to communicate with local people around him/her because indigenous people always speak by their language in daily communication. Many Chinese parents state that after their children have been able to walk, they let them having interaction with others by themselves at home and at outside with peers or indigenous adults. The researcher assumes that from the Chinese parents' perspective, the education of the Indonesian language for children over 5 years will be a late acquisition.

The data indicate that most Chinese parents begin to apply the Indonesia language in communicating with their children at 1−1,5 years (44%, *n*=50, *f*=22, *mean* of 1,25). Moreover, there are also Chinese parents who start to educate Indonesia language at the interval of 0−1 year (4%, *n*=50, *f* =2, *mean* of 0,5) and 1,5−2 years (32%, *n*= 50, *f*=16, *mean* of 1,75). The others start introducing Indonesia language to their children at 2−3 years old (20%, *n*= 50, *f*=10, *mean* of 2,5). Meanwhile, the interval age of 4−5 years has no frequency (0%, *n*= 25, *f*=0, *mean* of 4,5). The result shows that many Chinese parents teach their children to become a bilingual from 1 to 3 years, but the highest frequency is at 1−1,5 years. The results can be seen in Table 1 and Figure 1.

Table 1 Educating Bilingualism Frequency

No	Interval	Frequency	%
1.	0–1	2	4
2.	1–1,5	22	44
3.	1,5–2	16	32
4.	2–3	10	20
5.	4–5	0	0
	Total	50	100,00

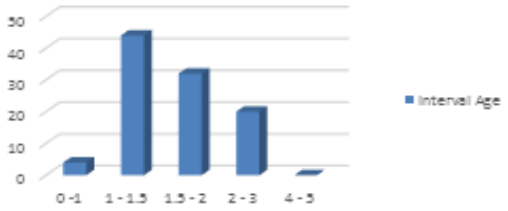

Figure 1 Frequency Differences

The researcher finds that the reason to educate the 2L1 is not only depending on the social factors, but it is also affected by physical-motor and language development. Thus, the researcher agrees that the interval age of 0−1 year is a basic development period so that Chinese parents focus on developing their children's physical-motor skills. Chinese parents do not specifically educate language, but they reinforce the children's babbling. The interval age of 1−1,5 years depicts the fundamental acquisition of language, especially for the 2L1. The children begin to comprehend words and start to produce language during this period. That is why most Chinese parents begin to communicate using the Indonesian language with their children at this interval age.

Some Chinese parents start to teach Indonesia language at interval age of 1,5−2 years. The others teach their children from the age of 2−3. The researcher finds this is an uncomplicated period because, at this age, the children use words in communicating. By producing words of the foreign language, the child will imitate them as well. The interval age of 4−5 years has no frequency because, for parents, it is the start of school. Both children and parents do not typically have quality time to develop the second language.

Most Chinese parents report that they have considered educating their children from an early age to become bilingual because their children need to communicate with indigenous by using the second language. The researcher confirms that they instinctively realize the supporting aspects in developing bilingualism: intellectual (cognition and language) and physical-motor development. So, it is important to narrow that highest frequency to figure out the optimal age in educating the 2L1 by considering the intellectual and physical-motor development.

The development of two languages or more follows physical-motor development. There is a strong relationship between bilingualism and physical-motor development. Bilinguals are superior in having interactions, imitating, responding, reaching, grasping, or pointing. The relation refers to the effects of physical-motor development for language. Physical-motor ability like sitting skills has a

significant effect on language that is in receptive vocabulary around 10 to 14 months because the onset of independent sitting (Libertus & Violi, 2016) and walking can forecast infants' productive vocabularies. Both receptive and productive language developments are predicted by the acquisition of walking (Walle & Campos, 2014). The researcher notices that both theories are true because children are superior in having interactions, imitating, responding, reaching, grasping, or pointing.

No one can force infants to develop their language or to make them produce some languages if their cognition and physical-motor abilities do not enable them or reach the linguistic phase. On the contrary, if infants can communicate biologically, they will be prevented to do it. Thus, there is a strong relationship between 2L1 acquisition and physical-motor development. The relation refers to the effects of physical-motor development for language. It is important to identify the optimal age to educate the 2L1 because some families in Indonesia, although they are exogamous marriage, fail to raise their child to master that 2L1. Concisely, language development adapts to physical-motor development. Figure 2 shows the relationship between language development and physical development and indicates the optimal age for 2L1 acquisition.

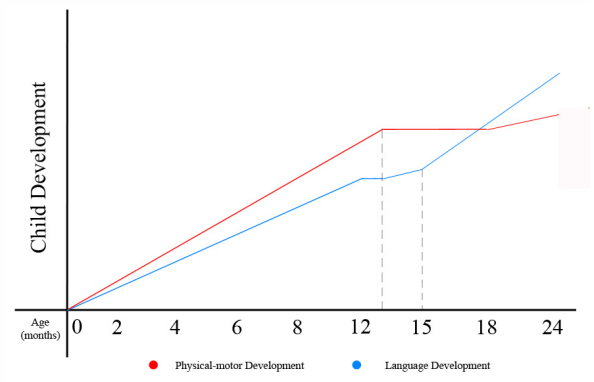

Figure 2 The Raise of Language and Physical-Motor Development

Children's physical-motor development at the age of 0−6 focuses on the body and head development. Meanwhile, the age of 6−12 months concentrates on hands and feet development such as crawling that is a combination of many skills. It proves that physical skills develop very fast from 0 to 12 months. The age of 12−18 months is the time to develop their hands and feet coordination, but it is not significant, or it can be said as a flat development. After 18 to 24 months, the development runs again but slowly. The physical development begins to slow after children can generally walk at the period of 13−15 months. The other gross motor skills like running will be acquired at 18 months. The period of 13−18 months is not the physical development period, but it is the time to focus on language. Motor development over 18 months, in other words, radically alters the children's experience with the world. This situation has significant implications for the development of communication in general and language in particular.

In addition, language ability develops rapidly from birth to 12 months. The development at the age of 0−12 months is the beginning period of language development. Infants' language abilities are limited to sounds involved in cooing and babbling. This pre-linguistic period is the time when infants understand their language first as young as 5 months (Berman, 2017). The first linguistic component is sound (phoneme), word, and their meaning. From the age of 12 to 13 months, children begin expressing more complex language, not only producing sound, but also beginning to comprehend words, and so forth. They can comprehend more or less than 50 words from 12 to 13 months. In the age of 13−15 months, the children have started to comprehend many words even though they cannot produce all of the words yet. At the age of 15 months, they begin to produce words (one-word phrase). Then, it increases until 24 months (two words) up to 5 years in the development period. By this condition, children will comprehend words and their meaning, especially for the 2L1 because the acquisition of the 2L1 is from acquiring the word. Thus, this period can be said as the optimal time to begin educating the second language because they have acquired the phonological system of 1L1, and the strategy in acquiring the 1L1 will be transferred to the 2L1.

At 13 to 15 months, the children can walk independently. It can be said as the first walking period. The first walking period is the new motor skill development which opens a wider environment and a new habit of interactions. The children can attract more attention especially from their mother and people around them. It may facilitate their interaction and language to develop. This condition changes children's cognition (sensorimotor) by experiencing exploration of the environment. Their cognition may also notice that they can attract others by social means.

By the ability to walk, they can interact with their environment as they wish and explore their surrounding environment. The children explore their environment if they can move easily or change positions. Therefore, they will explore anything and anywhere, and their thought and language will develop quickly because of getting many stimuli from other environments or new situations from people and things around them. This motor ability causes their language to develop. Moreover, the exploration enriches their vocabularies and the language system. It is really important for the 2L1 because they have no limitation in interacting. For instance, a child who has just been able to walk wants to go everywhere, reaches and takes something or greets people by their gestures. Adults who have mastered that second language must assist them in developing by actively communicating. As a result, their 2L1 will develop rapidly at an early age if they interact with other people by walking especially with adults.

After that period, the development in both languages increases rapidly up to 24 months. When children have walked, their environment becomes wider. Although their main environment is at home, they can also socialize with people outside of the home. With the language used outside of the home (multilingual environment) in playing, it becomes the vehicle to develop bilingualism. The children learn and internalize social rules which develop self-regulation, and relationship to others (Armstrong et al., 2014).

CONCLUSIONS

Physical-motor development becomes an important factor in the development of children bilingualism. It affects language developments by the capability of having interaction by themselves. This physical-motor development

can figure out when children are ready cognitively and physically to get many stimuli from the wider environment.

This research concludes that the period of 13-15 months can be declared as the optimal age to acquire the 2L1 for infants since they already have acquired the minimum linguistic unit (phonetic). Then, their minds also begin to comprehend words by their phonetic knowledge, and their cognition already focuses on acquiring language. The cognition becomes more mature to get any stimulus from the foreign language because they are already free of mastering the main physical-motor skills. Thus, children can focus on learning two languages or even more. The early education at this period not only facilitates acquiring languages but also reduces the loss of native language.

Indonesian children have generally been starting to walk at 13-15 months, but this period is relative and not absolute. Several children have walked independently before the age of 13 months. For a reason, bilingualism milestone can be mediated by motivation and learning. In addition to this limitation, language acquisition depends on the child's interest, desire, and obsession toward those languages.

Therefore, the result of this research can lead parents to begin educating the second language simultaneous in an appropriate time to avoid failure of raising children to become bilingual. Further research may describe the characteristic of 2L1 or other aspects that may affect 2L1.

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