

*Trilingual Preschool Children's Cognitive Understanding of Mouth Action Verbs in Chinese, English and Malay*

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**Abstract**

This paper examines how Malaysian Chinese trilingual preschool children used their linguistic and cognitive knowledge to associate the actions depicted by eating and drinking verbs with various types of food. Eight commonly used Chinese eating and drinking verbs (吃 “eat”, 喝 “drink”, 咬 “bite”, 吸 “suck”, 嚼 “chew”, 吞 “swallow”, 啃 “nibble”, 舔 “lick”) were selected as target verbs and tested 80 preschool children aged between 5 and 6 (Mean: 5.92) from Malaysia. The results show that the extent to which the children understood and used the verbs and other related words reflected their life experience and cognitive understanding of the physical eating and drinking actions in relation to the types of food. It was also found that the children's cognitive skills and language proficiencies in the three languages were closely related to their family background and sociolinguistic environment. The results of the study, though limited to trilingual children in Malaysia, can be viewed as a reflection of the general trend of trilingual development in children and may serve as a reference for educators and parents in their teaching and parenting trilingual children.

Keywords: Eating Verb, Drinking Verb, Child Language Acquisition, Cognitive Development, Trilingualism, Chinese, English, Malay

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## Introduction

Malaysia is a multi-ethnic, multi-cultural and multilingual society, with Malays, Chinese and Indians making up the majority of its population. According to the Department of Statistics Malaysia, the country's population in 2020 is estimated at 32.7 million, which comprises of 29.7 million (90.8%) citizens and 3.0 million (9.2%) non-citizens. Among all the ethnic groups in Malaysia, the Chinese is the second largest. The majority of the Malaysian Chinese descended from those provinces in the south east coast of Mainland China, such as Fujian, Guangdong, and Hainan provinces. As the national and official working language of Malaysia, Malay is a compulsory subject in schools. As a foreign language, English is also a compulsory subject in schools. Both languages serve as common languages of different ethnic groups to communicate with each other. Apart from its dialects, such as Hokkien, Cantonese, Hakka, Teo Chew, and Hainanese, Mandarin Chinese is vigorously promoted by and widely spoken by the members of the Chinese community. Their common goal is to make Mandarin Chinese the medium of instruction in schools.

With the great effort of the Chinese community for more than half a century, Malaysia now has the most complete Chinese education system other than Mainland China, Hong Kong, Macau, and Taiwan. According to the Ministry of Education Malaysia, as of 2021, Malaysia has 1,298 National Type (Chinese) primary schools<sup>1</sup> and 60 Chinese Independent Secondary Schools. Malaysian Chinese parents normally send their children to Chinese-medium primary schools, which provide five to six hours of Chinese lessons per week. After completing primary education, students from National Type (Chinese) primary schools may attend Malay-medium National secondary schools, National Type secondary schools, or Chinese Independent Secondary Schools. The differences between National and National Type secondary schools are that the latter comprises of mostly Chinese students who receive 2.5 to 3.3 hours of Chinese lessons per week, while the former have fewer Chinese students and Chinese is an elective subject with a 2-hour lesson per week. Chinese-medium Chinese Independent Secondary Schools<sup>2</sup> emphasize mother tongue education and provide students 5 hours of Chinese lessons per week, while they also learn Malay and English.

Pre-schooling is not obligatory in Malaysia and the curriculum of preschools is unstandardized. The curriculums of those MOE preschools can be different from those of other private agencies. On average, children spend 4 hours per day in preschools. Deducting the time periods for science, mathematics, and aesthetics subjects, children are left with very little time learning language subjects. Hence, the language learning of preschoolers mainly rely on the language environment in their daily life, such as interactions with family members at home or teachers and peers at school. This type of bilingual and multilingual learning is typical among all ethnical communities in the multilingual society of Malaysia. Such a multilingual environment can be advantageous for young children if their learning is mostly through the “acquired system” but not the “learned system” (Krashen, 1987). However, with the pressure for early development of multilingual skills, parent and kindergarten reenforced formal learning of three languages has become common among Malaysian children before school age. What factors are involved in trilingual development in preschool children and

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<sup>1</sup> Primary schools in Malaysia are divided into two types: National School and National Type School (vernacular schools). The former uses Malay and the latter uses either Chinese or Tamil as the medium of instruction. The curricula used are standardized by the Ministry of Education (MOE), with Malay and English provided as compulsory subjects in all schools.

<sup>2</sup> Chinese Independent Schools are funded by the Malaysian Chinese communities. There is a total of 60 Chinese Independent Schools in different states of Malaysia.

whether their use of commonly used words in daily life in the three languages show any positive language transfer or difficulties due to language interference are the questions worth the effort to find out answers to. This study recruited 80 Chinese dominated trilingual children in Malaysia and tested their use of 8 drinking and eating verbs in Mandarin Chinese, English and Malay with a picture-elicitation method. Our objectives were to examine the differences in the children's performance in their first (Mandarin Chinese), second (English), and third (Malay) languages, and to identify the factors that might have affected their mastery of their first language and competence in their second and third languages.

## 1. Studies on Children's Use of Action Verbs

Before children were able to utter meaningful sentences, they must have acquired the words that could build up the sentences. But how children learn to speak a language has been a research question that has been answered many times and in many ways. According to Moskowitz (1978), "it seems that they do so in a highly methodical way: they break the language down into its simplest parts and develop the rules they need to put the parts together" (p. 131). To follow this assumption, we tend to believe that one of the most important parts within a sentence is the verb structure, or the lexical meaning of the verb, which can be an indicator for measuring children's language development. For example, the verb island hypothesis (Tomasello, 1992) proposed that the verb-specific predicate structures are acquired by children through their understanding of the functions of the verb and its related nouns. That is the "functionally based distributional analysis" (Tomasello, 1992, p.28) of the language children are exposed to starts from verb structures.

Studies on the early verb use by children show that by the age of 2 children start to produce more varieties of verbs and most of them are action verbs (Mu, & Deng, 2009). This accords with the findings in Gao's (2001, 2015) studies on children's production of physical action verbs (PA verbs). The types of PA verbs produced by the Chinese, English and Swedish children in her studies include verbs of different body part actions, such as looking, eating, drinking, licking, kissing, carrying, taking, kicking, etc. Among children's early productions, drinking and eating verbs are found.

Kong et al. (2004)'s investigation on 1- to 5-year-old Chinese children's notional words acquisition found that there were 334 action verbs in 408 verbs produced, among which 吃 "eat" and 喝 "drink" were first produced between the age of 1;0 and 1;2. 咬 "bite" was produced at 2;0 and 啃 "nibble" after 3;6. Gao (2001)'s study on Chinese, English and Swedish children found that Chinese children produced 咬 "bite" at 1;9.21, English children produced *lick* and *bite* at 1;7.0 and 1;11.0 respectively and Swedish children produced *bite* "bite" and *slicka* "lick" at 1;11.17 and 2;3.3 respectively. The children in these studies produced the words at around the same age and they were used in similar contexts. This shows that children are able to use more difficult mouth actions, besides *eat* and *drink* after 1.5 years old.

Language development in bilingual or multilingual children similar to that in monolingual children to some certain extent, but more complex. For example, the proficiency of one language is faster than the other or another, which means one of the two or three languages become dominant (Yip, 2006). Smith (1931, 1935) was the first who studied on English-Chinese bilingual development. The results of the study revealed that the size of the English vocabulary of the bilingual children was smaller than that of monolingual children of the same age and language mixing occurred often. Sinologist Timothy Light (1977)'s study on

his daughter who was born to a Cantonese-speaking environment till moving to the United States at 16 months old revealed that language environment affects bilingual development in young children at all levels.

Singapore and Malaysia are both multilingual societies. Children learnt a second and even a third language before entering preschools. Studies on bilingual development in preschool children were conducted in the Bilingual Development Lab, Nanyang Technological University. These studies were mostly on language and cognitive development in bilingual children with the impacts of various social factors (e.g., Pua, 2016; Wang, 2014; Low, 2014). For example, Low (2014) examined word production of trilingual (Chinese, English and Malay) Malaysian Chinese children aged 3-5 and found imbalance in their trilingual development due to their language environment and other social factors. Chin & Gao (2014)'s study on the use of 拿 “take” action verbs by Chinese Malaysian high school students showed that the Chinese speaking bilingual school children had certain preference in their word use and their Chinese vocabulary development was affected by other languages.

Studies on language development in trilingual children are not many. Hence, this study explored trilingual word use by children aged 5-6 in Malaysia. The focus was on the use of eating and drinking verbs in Chinese, English and Malay. Previous studies on eating and drinking verbs with a comparative approach mostly involve only two languages and they are more theoretical than empirical (e.g., Yang, 2007; Sun, 2013; Zhang & Wei, 2013; Jia & Wu, 2017).

## 2. Methodology

### 2.1. Participants

80 preschoolers aged between 5;0.4 and 6;10.4 (Mean: 5.92) were recruited from Malaysia (See Table 1) for the study.

Participants	Boys	Girls	Total	Mean Age
5 Years Old	21	22	43	5.55
6 Years Old	19	18	37	6.29
	40	40	80	5.92

Table 1. An Overview of Trilingual Participants

The children were from middle class native Malaysian Chinese families, enrolled in preschools in Malaysia. Their mother tongue is Chinese and their English and Malay were simultaneously learned. Most of their English and Malay language proficiencies are lower than their Chinese. They attended mainly Chinese-medium preschools. On average, they spent four hours per day in preschools and each of the language subject lessons was about one hour per day.

### 2.2. Eating and Drinking Verbs in Chinese, English and Malay

Based on Gao (2001)'s classification of mouth actions verbs, a total of eight eating and drinking verbs (*eat, drink, bite, suck, chew, swallow, nibble, lick*) commonly used in children's daily life were selected for this study. Table 2 shows the meanings and examples of these words in the “Modern Chinese Dictionary (7<sup>th</sup> Edition)”:

Chinese	吃	喝	咬	吸	嚼	吞	啃	舔
Dictionary Definition	把食物等放到嘴里经过咀嚼咽下(包括吸、喝)。	把液体或流食咽下去。	上下牙齿用对着(大多为了夹物体或使物体的一部分从整体分离)。	物体把液体、气体等引入体内。	上下牙齿磨碎食物。	不嚼或不细嚼咽下去。	一点儿一点儿地往下咬。	到用舌头接触东西或取东西。
Example	吃饭, 吃奶, 吃药	喝水, 喝茶, 喝酒, 喝粥	咬紧牙关, 用嘴咬住绳子, 让蛇咬了一口, 咬了一口苹果	呼吸, 吸烟, 吸毒, 吸奶汁, 深深地吸了一口气	细嚼慢咽, 肉没有烧熟, 嚼不烂	囫圇吞枣, 狼吞虎咽, 把丸药吞下去	啃骨头, 啃老玉米	舔盘子, 猫舔爪子
English	Eat	Drink	Bite	Suck	Chew	Swallow	Nibble	Lick
Dictionary Definition	To put food in your mouth, bite it and swallow it.	To take liquid into your mouth and then down your throat into your stomach.	To use your teeth to cut into or through something.	To take liquid, air, etc. into your mouth by using the muscles of your lips.	To bite food into small pieces in your mouth with your teeth to make it easier to	To make food, drink, etc. go down your throat into your stomach.	To eat something by taking small bites.	To move your tongue across something.

					swallow.			
Example	Who ate all the biscuits?	We sat drinking coffee and chatting for hours.	He picked up the bread and bit into it hungrily.	She was noisily sucking up milk through a straw.	He is always chewing gum.	It's easier to swallow pills if you take them with water.	The bread had been nibbled by mice.	The child licked the spoon clean.
<b>Malay</b>	<b>Makan</b>	<b>Minum</b>	<b>Menggigit</b>	<b>Menyedut</b>	<b>Mengunyah</b>	<b>Menelan</b>	<b>Mengunggis</b>	<b>Menjilat</b>
Dictionary Definition	Memamahserta menelanan makanan, mengunyah (menelan, melulur, menghisap, dll) sesuatu.	Meneguk atau menelanusuatu yang cair.	Mengapit (mengacip, menyepit, dsb) dengan gigi.	Menarik masuk (ke dalam) dengan kekuatan udara (dengan mulut, hidung, dll), menghirup, menghisap.	Melumatkan (menghancurkan) makanan dalam mulut dengan gigi sebelum menelannya, memamah.	Memasukkan (makanan dll) ke dalam perut melalui kerongkong.	Menggigit sedikit-sedikit, mengering, mengeringrumit.	Merasa (mengambil) makanan dll dengan lidah.
Example	Jemputlah makan kuih ini.	Minum air, susu, dll.	Kaki pencuri itu digigit anjing.	Dia mengesat-nesat air matamata dengan mengyedut air yang keluar dari hidungnya.	Tangan ku menyuap nasi lagi, mulutku mengunyah perlahan-lahan.	Makanan itu pun dikunyahnya, kemudian barulah ditelannya.	Tikus itu mengunggis roti yang ditinggalkan di atas meja.	Susu yang tumpah itu habis dijilat kucing.

Table 2. Eating and Drinking Verbs in Chinese, English and Malay

The definitions of the verbs are from *Xiandai Hanyu Cidian* “Modern Chinese Dictionary”, 7<sup>th</sup> Edition, Oxford Learner’s Dictionaries, and *Kamus Dewan*, the Fourth Edition. They are all rather simple but we assume that children acquired the words in the three languages through real life experience rather than formal learning.

### 2.3. Data Collection Methods

Two methods were used for the data collection: A questionnaire completed by the children’s parents and an experiment conducted with the 80 children. The parents’ responses and children’s performances were coded and analyzed afterwards.

- Questionnaire

“Parent Report Form for the Studies of Lexical Development in Bilingual Children in Singapore” designed by Gao (2015) was used for parents to provide demographic and other relevant information of their children (e.g. family background, language(s) spoken at home, family activities, etc.)

- Experiment

The physical actions depicted by the abovementioned eight eating and drinking verbs matched with 30 kinds of food were prepared in pictures or video clips as visual stimuli for the experiment. As shown in Table 3, each action shown in pictures or video clips was matched with at least six kinds of food or drink that included (1) correct match of action and food, (2) incorrect match of action and food (marked with “\*”), and (3) controversial match of action and food (marked with “?”). The controversial match of action and food refers to the action that can be applied to the food in terms of function, but merely found in reality (e.g. drink oil, lick milk, etc.).

Visual Stimuli for Teaching	Visual Stimuli for Experiment					
	eating rice	noodles	chocolate	pill	porridge*	orange*
drinking water	orange juice	porridge	oil?	ice-cream*	egg*	
biting apple	chicken drumstick	grapes?	chili?	rice*	pill*	
“sucking” milk	orange juice	noodles	oil?	jelly?	sausage*	
chewing	peanut	rice	tofu	ice?	cotton candy*	
swallow	pill	tangyuan?	grapes?	fishball?	jelly?	hamburger*
“nibbling” corn	bread	apple	durian	lollipop?	pill*	
licking ice-cream	lollipop	cake?	ice?	milk?	potato*	

Table 3. Visual Stimuli – Action and Food/Drink Combination

The visual stimuli were shown to the children individually, following with relevant questions.

Before the experiment, parents of the recruited children were briefed the details of the study and signed the consent forms for their children's participation and for them to be video- or audio-recorded during the testing. The experimenter started with a warm-up session with the children individually and told them that they would be invited to play a game in which there were no right or wrong answers to the questions and they could take a break or end the game at any time they wanted to. Then the experiment started with the following procedures in Chinese which is the mother tongue of all the participants:

Part 1:

Experimenter: *Can you tell me what this is in Chinese/English/Malay?* (Experimenter pointing at the pictures of food.)

Child: *Mifan/Rice/Nasi.* (or, *I don't know.*)

Part 2:

Experimenter: *Please take a look at this picture/video. Can you tell me what he/she is doing?* (Experimenter pointing at the picture/ video.)

Child: *He/She is drinking* (or any other verbs in Table 3) *water* (or any other food in Table 3).

Experimenter: *Yes, this action is "drink" (verb). Can you remember this action? This action is "drink".*

Child: *Yes.*

Part 3:

Experimenter: *Please take a look at this picture/video* (a glass of orange juice or any other food in Table 3). *Can you tell me what this is?*

Child: *It is orange juice.*

Experimenter: *Can we apply that action to orange juice?*

Child: *Yes* (or *No*).

Experimenter: *How do we say that in Chinese?* (if the child answers *Yes* to the above question)

Child: *Drink orange juice* (or any other eating or drinking verb + food/drink)

Experimenter: *Can you tell me why?* (if the child answers *No*)

Child: *Because .....*

The experiment ended after all the pictures (action (verb) + food/drink (noun)) were asked, which lasted about 30 minutes.

### **3. Results and Discussion**

Children's responses in Chinese collected from the experiment were transcribed and children's answers were coded in "V+N" format which represents a verb phrase. A point scale with 30 as the maximum was used to quantify the children's answers. Each correct V+N match is worth one point. A correct match with an incorrect use of a word is given half point. A wrong match has zero point.

In the data analysis, we assumed that a child understood the meaning and usage of a verb if he or she uttered it and used it in a correct V+N structure.

We analysed the data in two ways: the naming rate and the application rate. The naming rate refers to the rate of the target verbs that the children used in response to the experimenter's first question. The results are shown in Figure 1 and Table 4. The application rate refers to



the rate of the verb phrases (V+N structure) that the children produced. The results of this type are shown in Figure 2.

### 3.1. Naming Rate

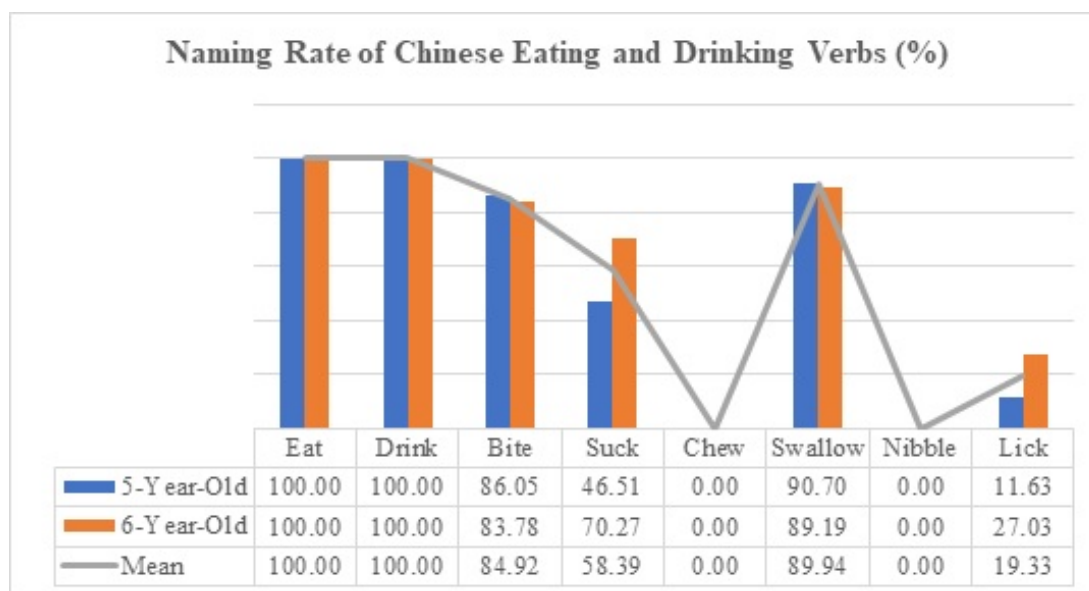


Figure 1: Naming Rate of Chinese Eating and Drinking Verbs (%)

Chinese Eating and Drinking Verbs	Number of Children who Produced the Word	Percentage (%)
吃“eat”	80	100
喝“drink”	80	100
咬“bite”	68	85
吸“suck”	46	58
嚼“chew”	0	0
吞“swallow”	72	90
啃“nibble”	0	0
舔“lick”	15	19

Table 4. Number of Children Who Produced the Target Verbs

As shown in Figure 1 and Table 4, both 吃“eat” and 喝“drink” were used by all children correctly. According to the framework of lexical typology, words related to eat and drink are basic words in all languages, as they express the basic human needs. Generally, basic words occurred early in a language as they are essential in daily communication since ancient times (Fu, 2004). Thus it is not surprising that all the children used the verbs 吃“eat” and 喝“drink” correctly.

The other six eating and drinking verbs 咬“bite”, 吸“suck”, 嚼“chew”, 吞“swallow”, 啃“nibble” and 舔“lick” were hyponyms of “eat” and “drink”. Hyponyms can be seen as the subclasses of a hypernym, conversely, a hypernym is the superclass of hyponyms (Liu, 2005). A hypernym describes a broader term, while a hyponym is a more specialised and specific

word (Fu, 2004). Hence, six of these eating and drinking verbs are more specialised verbs compared to “eat” and “drink”.

Children learn the most basic words early and more easily. The lexical expansion from basic words to specialised ones is usually age related. The results of this study show that the usage rate of the Chinese eating and drinking verbs produced by the children of the 6-year-old group was higher than that of the 5-year-old group. Cognitively, this can be explained by Piaget’s (1964) view that children’s production of words increase with more life experience.

As shown in the result, the usage rate of 舔“lick” was only 18.75% (15/80). Gao (2001)’s study found that English children produced the word *lick* as early as 1;7.0 and Swedish children produced the word *slika* “lick” as early as 2;3.3, but there was no use found of 舔“lick” by Chinese children before 2 years of age. It might be due to the difficulty in pronouncing the word with the consonant [t] that requires an aspirated stop followed by the vowel [ian] that is a nasal final. But the main reason might be that the action of licking is rarely seen. However, 嚼“chew”, the action that all children do after infancy was not used by any children. We can also assume that it was because of the difficulty in pronouncing the word but the fact might be that although we chew food every day, but it is a more specialised verb to describe the manner of eating, which is not commonly used in everyday life. No input, no output.

### 3.2 Application Rate



Figure 2: Application Rate of Chinese Eating and Drinking Verbs (%)

In Figure 2, eight eating and drinking verbs were sorted from the most frequently to the least frequently used words, from left to right, based on the “Dictionary of Modern Chinese Frequency”, but some of the results were unexpected. The application rate of the verbs by the children from the higher to the lower, was: eat (97.93%), drink (96.79%), lick (93.89%), swallow (90.45%), suck (79.24%), nibble (77.33%), chew (69.01%) and bite (62.30%).

In accordance with the naming rate, both 吃“eat” and 喝“drink” had the highest application rate, which was 97.93% and 96.79% respectively. This shows that these two basic words are

more general in meaning and have a wider range of usage as compared to other eating and drinking verbs. Children tend to acquire the basic word of a class of words first before they acquire other class members whose lexical meanings are more specialised (Gao, 2001).

The naming rate of both “lick” and “swallow” was low, but their application rate was as high as 93.89% and 90.45%. It might be due to the more specific meanings and features of the words. The meaning of *lick* is to move the tongue across the surface of something to get something and the meaning of *swallow* is to cause food to move from mouth into stomach without chewing. The actions depicted by the verbs are specific and easy to imitate and thus easy to apply once the children acquired the word meanings.

The application rate of 吸“suck” was 79.24%. 95% (76/80) of children failed the application of 吸“suck” to 面条 “noodles”. Most thought that one could only eat noodles but not sucking noodles. It is indeed true that people normally do not eat noodles by sucking but it doesn’t mean that functionally it is not possible. The children failed to take the cognitive perspective to understand the action depicted by the verb. It may also be due to language interference as the trilingual children acquired the English *suck* and the Malay *menyedut*. The sucking concept in the three languages may not be the same in the mapping to the lexical meaning. For example, eating Chinese noodles does involve certain manner of sucking, while eating Western noodles does not. The trilingual children’s judgment might have also been affected by the picture of a child drinking milk using a straw in one of the teaching pictures. They might have thought that a sucking action must be done using a straw and it could only be applied to liquid food. Preschool children are found to be more influenced by visual stimuli than linguistic input (Gao et al., 2014).

Overall, the application rate of target verbs among the 6-year-old children was higher than the 5-year-old children. This result was consistent with their vocabulary sizes of the three languages.

## Conclusion

Eight Chinese eating and drinking verbs (吃 “eat”, 喝 “drink”, 咬 “bite”, 吸 “suck”, 嚼 “chew”, 吞 “swallow”, 啃 “nibble”, 舔 “lick”) were selected for the experiment conducted with Malaysian preschoolers aged 5-6 to investigate their cognitive understanding of word use and the characteristics of child trilingual acquisition with Chinese as the first language. The overall performance of the 6-year-old children was better than that of the 5-year-old in both the naming of the target verbs and the applications of the verbs with various types of food words. The results support Piaget (1964)’s theory of cognitive development that children’s language proficiency improves with more life experience.

Specifically, children’s early trilingual vocabularies reflected their life experience. In other words, children gained their language and cognitive skills through experience in life. Children’s perception and cognition for the understanding of human physical actions in relation to linguistic expressions are verified again to have achieved and conceptualized through imitation and experience. Using visual stimuli, we found that the children’s cognitive perspective and language use were heavily influenced by their language and social environment. The imbalanced language proficiency of the trilingual children in this study are found to be due to the influence of their home language, the medium of instructions in preschools, and the habitual code mixing of Chinese, Chinese dialects, English and Malay. It is worth to mention that code mixing is a common phenomenon in Malaysia.

The results of this study were insufficient to represent the whole of Malaysian children aged 5-6, but it reflected the general trend of trilingual development of children. We wish that this study may serve as a reference to educators and parents, as well as reference and basis to future studies related to children language development in Malaysia.

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