

## Original Research Article

# The correlation between the dialogic parental guidance and the intensity of gadget utilization with the development of speaking and linguistic aspect of children at Tadika Puri early childhood education in 2018

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**Received:** 12 May 2019

**Accepted:** 05 June 2019

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### ABSTRACT

**Background:** Since child development potentially subjects to disorder or deviation, early screening using the Pre-Screening Developmental Questionnaire must be conducted. The research result of Mardina (2016) shows that 8.2% toddlers experience suspect during their speech development. The introduction to gadget which happens too early and the absence of time limit could bring negative impact. Dialogic guidance from parents is highly needed to minimize the negative impact(s) of gadget utilization. This research aims to find the correlation between the dialogic parental guidance and the intensity of gadget utilization with the development of speech and linguistic on early childhood.

**Methods:** The research design was analytical research with cross-sectional arrangement and quantitative approach. It was conducted at Tadika Puri Kindergarten. The size of sample was 35 people with purposive sampling technique. The instruments used were questionnaire and pre-screening developmental questionnaire (PDQ). The data analysis technique used was chi square and logistic regression test.

**Results:** Based on the research results, the majority of 25 respondents (71.4%) received good parental guidance, almost half or 10 respondents (28.6 %) had high-intensity of gadget utilization, while the other half i.e. 11 respondents. (31.4%) experienced late development in speech and linguistic aspect. P value (0.02) <0.05, there is correlation between dialogic parental guidance with speech development. P value (0.03) <0.05 meant that there is correlation between the intensity and the linguistic development. Regression test, p value: = 0.018 <0.05, OR =4.307 which meant that intensity has special correlation and has opportunity which is 4 times bigger than dialogic parental guidance.

**Conclusions:** There is correlation between dialogic guidance and the intensity of gadget utilization on the development of speech and linguistic.

**Keywords:** Gadget, Intensity, Parental guidance, Speech and linguistic development

### INTRODUCTION

Child growth and development is a continuous process which starts in the womb until adulthood. The critical period of child growth and development occurs during the first 5 years of their life which is known as the golden

years where children experience the peak of their optimum growth which might influence and determine their development in the future.<sup>1</sup> The aspect of child development is assessed from gross motor skills, fine motor skills, linguistic and speech skills, social interaction. There is possibility of disorder or deviation in

in every child development.<sup>2</sup> Early screening must be done to detect the presence of disorder or developmental delay, visual and hearing impairment. Early screening on child development could be done using Pre-Screening Developmental Questionnaire (PDQ). PDQ is one of early identification tools which has been standardized, issued by Health Department and has its validity tested.<sup>3</sup>

Based on the data of National Health Department of Indonesia, reports that 0.4 million infants in Indonesia experience developmental disorder, in terms of gross and net motor skills, hearing impairment, lack of intelligence and speech delay. Based on the data in Central General Hospital of Sanglah, it is found there were 18.81% infants who experienced developmental disorders in 2016 which had increased since the previous year.<sup>4</sup>

From several child developments, delay of speech and linguistic child development is rather high. Linguistic skill is sensitive toward delay or damage to other systems which involve cognitive skills, motor sensors, psychology, emotion and environment around children.<sup>5</sup> Based on the research conducted, it is shown that 8.2% toddler experience suspect during speech development.<sup>6</sup> Deviation in speech and linguistic development which is frequently experienced is speech delay.

The period of the first 2-4 years shows rapid increase in the complexity of speech and linguistic development.<sup>7</sup> One driving factor of speech delay is the lack of stimulus given by parents to children i.e. the lack of their initiative to talk, to interact and to play with children.<sup>8</sup> Meanwhile, based on another research conducted by Nurrachmawati 2014, one of the factors or stimuli which could affect child development is the child habit in playing with gadget.<sup>9</sup>

The introduction of gadget to children usually begins as a wrong diversion method of parents or family by showing game or video in gadget with hope that children would not be grumpy or stop crying. This wrong diversion indirectly introduces children to gadget which could later trigger more curiosity from children on gadget. The development of gadget these days has been rampant with various brands and types. Gadget which has become more attractive with various application makes it easier for people to access any types of information from all aspects of life Indonesia is included as the 4<sup>th</sup> biggest population of gadget user in 2016. Based on the survey, smartphone users in Indonesia has increased by 43% in 2015 compared to the previous year.<sup>10</sup>

Gadget is a term used to call some types of technology which keeps developing rapidly and has specific function. Some examples of gadget include smartphone, iphone, computer, laptop and tab. Besides alphabet and graphic recognition applications, there are other entertainment application in PC, tablet or smartphone such as social media, video, and video game. These days children would more likely to use their gadget for playing game

instead of learning or playing outside their house with their same age peer.<sup>8</sup> The integration of digital technology or gadget into child development invades many stages of development which supposed to be achieved. States that children who are lack of interaction, rarely plays with their peer and lack of communication may lead to speech and linguistic delay.<sup>11</sup>

The introduction to gadget which comes too early could bring positive and negative impacts. This is driven by some factors such as frequency, duration, and parental guidance. The utilization of gadget as basic learning tool for children would bring positive impact such as increasing children's creativity and thinking skills. Dialogic guidance from parents is highly needed to minimize the negative impact of gadget utilization on children where parents controls and directs their children while setting firm time limit for children to play their gadget.<sup>12</sup> The negative impact may turn someone becomes timid, lack of confidence, introvert and stubborn.<sup>13</sup> This is in accordance with the research conducted by Salsabila which finds that there is an influence from the duration of gadget utilization to children development at Al-Azhar Banda Aceh Kindergarten.<sup>14</sup>

Based on the preliminary study at Tadika Puri Kindergarten, out of 10 mothers who picked up their children stated that 100% of their children had been introduced to gadget. Four respondents (40%) only allow their children to play their gadget during holiday and sometimes accompanied by parents, five people (50%) allow their children to play gadget 1-2 hours/day and sometimes accompanied by parents while one respondent (10%) only allowed their children to play their gadget when parents are present. There are 8 respondents (80%) who state that their children play more games and watch Youtube.

Based on the data and background, the author conducts a research on "The Correlation between the Dialogic Parental Guidance and the Intensity of Gadget Utilization with the Development of Speech and Linguistic Aspect of Children at Tadika Puri Early Childhood Education in 2018".

## **METHODS**

This research was an analytical research. The design used in this research was cross-sectional with quantitative approach i.e. conducting measurement or observation on all dependent variables with independent variable at the same time. This research was conducted at Tadika Puri Kindergarten on August 2018. The population of this research was all children aged 36-60 months at Tadika Puri Kindergarten. The sample of this research is children aged 36-60 months who came to Tadika Puri Kindergarten. Determination of sample size in this research was children aged 36-60 months who came to Tandika Puri Kindergarten and fulfilled the inclusion and

exclusion criteria which amounted to 35 respondents. Sampling technique in this research was purposive sampling where sample determination with intentional sampling based on the required prerequisites. Data compilation through license to process data compilation, providing explanation to respondent regarding the research and the way to fill questionnaire, asking for consent to become respondent, taking sample of parental guidance and intensity of gadget utilization of children by asking their mother or caretaker to fill questionnaire, taking data of child development by doing developmental examination using PDQ. Instrument used in this research was Pre-Screening Developmental Questionnaire (PDQ) sheet specifically on linguistic and speech. To prevent omission in questionnaire on the questionnaire of dialogic parental guidance, test on the validity and reliability was conducted on 35 respondents.

## RESULTS

Seeing from the physical environment, it has been neat and clean, the existing rooms are used according to their function, outdoor entertainment facilities i.e. slide, see saw and swing, while indoor facilities consist of shelf to put children's bag, black board, table, chair, medical box, also various writing tools and educational play tools which is block among others. There were 4 teachers with bachelor degree in education; the number of student in 2018 was 35 students. The vision of Tadika Puri Kindergarten is to become an institute which helps children to optimally develop their basic potential i.e. intelligence and emotion.

The mission of Tadika Puri Kindergarten are; 1) Creating play and learning environment which is conducive, integrative, creative, innovative, challenging and fun; 2) Producing high-qualified graduates in terms of their intellectual development who are creative, independent, tolerant, honest and devoted; 3) Answering challenge on the needs of basic education of prospective students who have the quality and readiness.

Subject in this research was children aged 36-60 months who came to Tadika Puri Kindergarten, respondents used in this research amounted to 35 respondents who fulfil the inclusion criteria. The characteristics of research subject was distributed into the frequency distribution table as follow.

**Table 1: Frequency distribution of respondent characteristic based on age in 2018.**

Age	Frequency	Percentage (%)
36 months	4	11.4
48 months	6	17.2
54 months	8	22.8
60 months	17	48.6
Total	35	100

Based on Table 1, it was shown that out of 35 respondents, the minority of respondents which was 4 respondents (11.4%) aged 36 months, 6 respondents (17.2%) were 48 months and 8 respondents (22.8%) were 54 months, and almost half or 17 respondents (48.6%) were 60 months old.

**Table 2: Frequency distribution of respondent characteristic based on gender in 2018.**

Gender	Frequency	Percentage (%)
Female	15	42.9
Male	20	57.1
Total	35	100

Based on Table 2, it was shown that out of 35 respondents, almost its half or 15 respondents (42.9%) were female while the majority or 20 respondents (57.1%) were male.

**Table 3: Frequency distribution of respondent characteristic based on age during introduction to gadget in 2018.**

Age	Frequency	Percentage (%)
2 years old	10	28.5
3 years old	14	40
4 years old	8	22.9
5 years old	3	8.6
Total	35	100

Based on Table 3 it was shown that out of 35 respondents almost its half or 10 respondents (28.5%) had known gadget since they were 2 years old, 14 respondents (40%) had known gadget since they were 3 years old, the minority or 8 respondents (22.9%) had known about gadget when they were 4 years old while 3 respondents (8.6%) knew about gadget when they were 5 years old.

**Table 4: Frequency distribution of respondent characteristic based on the type of gadget used in 2018.**

Gadget type	Frequency	Percentage (%)
Smartphone	25	71.4
Tablet	8	22.8
Laptop	2	5.8
Total	35	100

Based on Table 4 it was shown that out of 35 respondents, the majority i.e. 25 respondents (71.4%) used smartphone, small section or 8 respondents (22.8%) used tablet, and 2 respondents (5.8%) used laptop.

Based on Table 5 it was shown that out of 35 respondents, the minority or 4 respondents (11.4%) utilized gadget to study, while the majority i.e. 19 respondents (54.3%) utilized gadget to watch Youtube

and almost its half or 12 respondents (34.3%) utilized gadget to play games.

**Table 5: Frequency distribution of respondent characteristic based on gadget utilization in 2018.**

Gadget utilization	Frequency	Percentage (%)
Learning	4	11.4
Watching Youtube	19	54.3
Playing Games	12	34.3
Total	35	100

**Table 6: Frequency distribution of respondent characteristic based on the level of education of parents (mother) in 2018.**

Education	Frequency	Percentage (%)
Primary	1	2.9
Secondary	5	14.2
High	29	82.9
Total	35	100

Based on the Table 6 it was shown that out of 35 respondents, the minority i.e. 1 respondent (mother) had primary education (2.9%) and 5 respondents (14.2%) had secondary education while almost all or 29 respondents (82.9%) had high education.

**Table 7: Frequency distribution of respondent characteristic based on parent's (mother's) occupation in 2018.**

Occupation	Frequency	Percentage (%)
Employed	25	71.4
Unemployed	10	28.6
Total	35	100

Based on Table 7, it was shown that out of 35 respondents, the majority or 25 respondents (71.4%) were employed while almost its half or 10 respondents (28.6%) were unemployed.

**Table 8: Frequency distribution of dialogic parental guidance in the utilization of gadget during early childhood at Tadika Puri Kindergarten in 2018.**

Dialogic parental guidance	Frequency (f)	Percentage (%)
Good	25	71.4
Lacking	10	28.6
Total	35	100

Based on the Table 8, it was shown that out of 35 respondents, the majority or 25 respondents (71.4%) had good parental guidance while almost its half or 10 respondents (28.6%) were lack of parental guidance.

**Table 9: Frequency distribution of the intensity of gadget utilization on early childhood at Tadika Puri Kindergarten in 2018.**

Intensity	Frequency (f)	Percentage (%)
High	10	28.6
Moderate	19	54.3
Low	6	17.1
Total	35	100

Based on the Table 9 it was shown that out of 35 respondents, almost its half or 10 respondents (28.6%) had high intensity of gadget utilization, the majority i.e. 19 respondents (54.3%) had moderate intensity while the minority or 6 respondents (17.1%) had low intensity.

**Table 10: Frequency distribution of speech and linguistic development on early childhood at Tadika Puri Kindergarten in 2018.**

Speech and linguistic development	Frequency (f)	Percentage (%)
Delayed	11	31.4
Normal	24	68.6
Total	35	100

Based on the Table 10, it was shown that out of 35 respondents, almost its half or 11 respondents (31.4%) experienced delay in speech and linguistic development while the majority or 24 respondents (68.6%) had normal development of speech and linguistic skills.

Based on the Table 11 it was shown that out of 10 respondents (28.6%) whose dialogic parental guidance were lacking showed delayed speech and linguistic development on the majority i.e. 6 respondents (54.5%) and normal speech development on the minority i.e. 4 respondents (16.75%). Out of 25 respondents whose had good dialogic parental guidance showed delayed speech and linguistic development on 5 respondents (45.5%) and normal development on almost all respondents i.e. 20 respondents (83.3%). P value = 0.02 where p value (0.02) < 0.05 which proved the relation between dialogic parental guidance in gadget utilization with speech and linguistic development.

Based on the Table 12 it was shown that out of 10 respondents (28.6%) whose intensity of gadget utilization were high showed delayed speech and linguistic development on 6 respondents (54.5%) and normal development on the minority i.e. 4 respondents (16.7%). From 19 respondents whose intensity of gadget utilization were moderate showed delayed speech and linguistic development on 5 respondents (45.5%), and normal development on 14 respondents (58.3%). No one from 6 respondents whose intensity of gadget utilization were low experienced delay in their development. P value = 0.03 where p value (0.03) < 0.05 which proved the

relations between the intensity of gadget utilization toward speech and linguistic development.

**Table 11: Cross tabulation of dialogic parental guidance in gadget utilization toward speech and linguistic development on early childhood at Tadika Puri Kindergarten in 2018.**

Dialogic parental guidance	Speech and linguistic development				Total		P value
	Delayed		Normal		F	%	
	F	%	F	%			
Lacking	6	54.5	4	16.7	10	28.6	0.02
Good	5	45.5	20	83.3	25	71.4	
Total	11	100	24	100	35	100	

**Table 12: Cross tabulation of the intensity of gadget utilization toward speech and linguistic development in early childhood at Tadika Puri Kindergarten in 2018.**

Intensity	Speech and Linguistic Development				Total		P value
	Delayed		Normal		F	%	
	F	%	F	%			
High	6	54.5	4	16.7	10	28.6	0.03
Moderate	5	45.5	14	58.3	19	54.3	
Low	0	-	6	25	6	17.1	
Total	11	100	24	100	35	100	

**Table 13: The result of logistic regression analysis on dialogic parental guidance, intensity of gadget utilization with speech and linguistic development in early childhood at Tadika Puri Kindergarten in 2018.**

Variable	P value	OR	CI 95%	
			Lower	Upper
Dialogic parental guidance	0.029	3.209	1.211	11.708
Intensity	0.018	4.307	1.340	13.837

Based on the Table above, the intensity of gadget utilization where p value =0018 lower than 0.05, OR =4.307 meant that the variables which had been tested multi variately, the intensity of gadget utilization had meaningful relation and had 4 times bigger chance from dialogic parental guidance in gadget utilization toward speech and linguistic development in childhood.

## DISCUSSION

The research result showed that the higher education of parents' education, the risk of child development disorder would be lower. Parents with high level of education were open minded and could process new information while filtering those information, so that they could choose the best things for their children and would not disturb child development. Implication of gadget utilization on children with full parental supervision could bring positive impacts on children such as enriching knowledge, improving creativity and exploration skills, thus giving active role for parents to limit their children in using gadget to prevent them from dependency to gadget while encouraging children to play more with their peers. High intensity of gadget

utilization, this goes in line with the theory which states that gadget utilization on toddlers could influence speech and linguistic development, excessive and uncontrolled gadget utilization could hamper child ability to socialize or communicate with their surrounding.<sup>15</sup> Based on the child characteristic data, it was shown that the majority of parents introduced gadget to children when they were 3 years old. Preschool is a critical period in ensuring optimal child development since it determines how children would develop in the future<sup>1</sup>. In this research, it was shown that the majority of respondents were male. According to Soetjningsih, right hemisphere development on boys was better i.e. abstract task which requires creativity thus making boys tend to have high curiosity and conduct various experiments. Applications in gadget were not only for learning which could enhance child development through alphabet and graphic recognition, calculation app but also entertaining application such as social media, video, and game.<sup>5</sup> Based on the result of this research, the majority of parents stated that their children mostly used their gadget to watch Youtube using smartphone. Based on the research Seo MY, it was found that gadget could give stimulus through visual and hearing sense which could cause

instability of child mentality and lack of attention on other things.<sup>16</sup>

Implication of gadget utilization is continuous gadget radiation which is bad for children who are growing and developing since high radio frequency (RF) wave could damage body cell. Almost half of the respondents experienced delay in speech and linguistic development. Prevalence coefficient showed relatively high result compared to the research conducted by Mardiana's research which showed that toddlers experienced suspect in speech development. Speech and linguistic development of children becomes the indicator of all child development because it is sensitive to the delay in other aspects.<sup>6</sup> This occurs because linguistic skill is influenced by cognitive skills, motor sensor, psychology, emotion and the surrounding environment of children.<sup>2</sup> Susanto stated that in general speech and linguistic development of children could improve their intellectual and basic skills while specifically developing expression, emotion, imagination and mind.<sup>17</sup>

Implication of delayed speech and linguistic development on children would affect children in future in the way it hinders their study which commonly known as learning disabilities.<sup>18</sup> The high number of delayed child development in term of speech and linguistic skills requires imminent attention because it could determine their development in the future and development in other aspects.

The result of statistical test revealed significant relation between parental guidance toward speech and linguistic development of early childhood at Tadika Puri Kindergarten. From the research result acquired from the respondents whose received good dialogic parental guidance, almost all experience normal speech and linguistic development. The result of statistic result also revealed significant relations between the intensity of gadget utilization toward speech and linguistic development on children at Tadika Puri Kindergarten.

This research result is in accordance with the research conducted by Trinika which showed significant result between the exposure of gadget utilization with psychosocial development of pre-school children.<sup>19</sup> The intensity of gadget utilization has a meaningful correlation and has 4 times higher chance than dialogic parental guidance in gadget utilization toward speech and linguistic development during early childhood. Children with high intensity of gadget utilization were rarely or even hardly communicate with other people around them, to socialize or play with their same age peers. This caused children did not acquire stimulus which lead to delayed speech and linguistic development.

## CONCLUSION

The majority of dialogic parental guidance in gadget utilization was good. Almost half has high intensity of

gadget utilization. Almost half experience delay on speech and linguistic development on infant. There is significant relationship between dialogic parental guidance in the gadget utilization for toddler toward speech and linguistic development. There is significant relationship between the intensity of gadget utilization for toddler toward speech and linguistic development. The intensity of gadget utilization has meaningful relationships and has 4 times bigger chance from dialogic parental guidance toward speech and linguistic development on infant.

## ACKNOWLEDGEMENTS

Authors would like to thank all respondents, parents and children at Tadika Puri Kindergarten who have participated well in this research, the Head of Kartini Bali Foundation who has supported the funding of this research, and the board of Directors who have contributed many inputs in the completion of this research.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Gusti Ayu MW, Ni Nyoman DW. The correlation between the dialogic parental guidance and the intensity of gadget utilization with the development of speaking and linguistic aspect of children at Tadika Puri early childhood education in 2018. *Int J Res Med Sci* 2019;7:2512-8.