

PAPER

The Impact of Gadget Usage on the Social and Linguistic Development of Primary School Students

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ABSTRACT

The objective of this research is to describe the impact of gadget usage on the social and linguistic development of primary school students. The study used the mixed-methods sequential explanatory design. In determining the subject of the research—namely, 251 children consisting of second graders and fifth graders in Jakarta, Indonesia—we used purposive sampling. Purposive sampling was also used to determine the research location—namely, two public primary schools and two private primary schools in Central and South Jakarta. As for the data collection, questionnaires, interviews, and observations were employed, resulting in quantitative data presented statistically in tables and charts. The regression analysis performed to figure out the social development of the primary school students in Jakarta resulted in a score of 0.000, suggesting that the students possess social capabilities and skills displayed when they are among their peers—namely, understanding the emotional conditions of their friends, accepting themselves, and maintaining friendship. The students are also capable of comprehending the thought, feeling, and behavior of their friends, thus enabling them to develop well-being skills. A regression analysis score of 0.001 suggests that gadget usage at home and at school influence the linguistic development of the primary school students. Our qualitative analysis corroborates the regression score by suggesting that gadget usage improves the growth and development of the social and linguistic behavior of the primary school students. In light of the impacts of gadget usage on the social and linguistic development of the primary school students, it is highly recommended that both the school and the parents put in place a code of ethics and educational guidance regarding gadget usage to mitigate the negative impacts of gadgets on students.

KEYWORDS

impacts of gadgets, social development, linguistic development

1 INTRODUCTION

The growth of information and communication technology significantly impacts all aspects of human life. Due to globalization and the increasing need

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for fast-paced information exchange, communication technology has become inevitable in the daily life of and interaction among the people of today's global society. Technologically advanced communities require media to enable easy communication among individuals, including primary school students, who use various media, such as headphones, tablets, smartphones, laptops, and various other gadgets which have evolved from a means of communication into a means of entertainment [1]–[3].

Whether used for communication or entertainment purposes, these gadgets have both positive and negative impacts. The positive impacts of gadgets include the stimulation of critical and creative thinking, better judgment in sorting information, and resourcefulness in obtaining information and knowledge to support a learning process. Besides allowing users to play games, the features found in gadgets can also be used for learning, thus enabling children to engage in positive activities, such as learning through games to sharpen their intelligence and creativity [4]–[5]. The negative impacts of gadgets include excessive supply of information, exposure to inappropriate content, improper “netiquette,” and addiction to gadgets. These impacts affect both emotional and social interactions since students may personify gadgets by perceiving them as friends that can provide intimacy and social support [6]–[9].

The increasing use of gadgets has become a concern for parents, educational institutions, and the people in general. In 2012, Statistics Indonesia (Badan Pusat Statistik/BPS) reported that 82.34% of Indonesian children find more enjoyment in using their gadgets, while those who enjoy reading account for only 17.66%. A survey in 2014 performed by Groupe Spéciale Mobile Association revealed that as many as 7.22 billion of the global population are gadget users. The data presented also suggests that the majority of these people include children. This is also corroborated by the study performed by the Ministry of Communication and Information in collaboration with UNICEF, which suggests that at least 30 million of children and teenagers in Indonesia are internet users and that digital media is their main instrument in communicating.

In 2016, the American Association of Pediatrics (AAP) released the findings of their research, stating that gadgets are children's most prominently used media and that the number of children using gadgets has seen a significant increase (almost twice as much, from 38% to 72%). This means that the use of digital media, such as gadgets, among children soars considerably due to their tendency to have high adaptability and strong capability to master technology. Furthermore, digital media devices can be easily obtained and operated, and thus quick to master. As a result, children find comfort in interacting with these non-human agents [10].

Children are easily fascinated by the sophistication of the features offered by gadgets. These advanced features enable them to easily communicate intensely with other people. Research [11] reveals that gadgets provide students with the ease of interacting with many others through social media without having to go somewhere or spend a lot of time. This is possible due to technological advancement resulting in the emergence of many social media platforms that are equipped with entertainment and communication features appealing to children. Distance is no longer an obstacle in communicating. Gadgets also make it easier for students to discuss lessons and homework that they haven't fully understood with their teachers by means of short messages of WhatsApp.

Gadget usage among children results in indifference toward their surroundings [12]. Current trends require the children to actively interact and communicate through the internet or social media. This leads to the excessive use of gadgets and

ultimately indifference toward their surroundings. They would rather play with their gadgets instead of with friends living nearby. Consequentially, the amount of real-life interaction between children is reduced [1], [12]. Furthermore, it is also stated that, although originally intended as a means of communication, gadgets have become the tools used to seek entertainment. This explains why children tend to become antisocial and indifferent toward the people around them—they are too busy playing with gadgets. Gadgets have redefined what it is to be “alone,” transforming it into a state that makes the children feel more alive and entertained. In other words, they no longer require intense social interaction since their relationship with gadgets can provide them with intimacy [14]. The interaction they have with gadgets is faster and more personal than any other social activities [15]. With one advanced gadget, a student can listen to the music, play games, surf the internet, watch videos, and engage in many other activities despite being alone in a room, without the presence of any other person. The increase in the use of gadgets and different ways of communicating has created a “pseudo-fun” established by technological devices. Gadgets may support and enable people to do things more easily. However, they also lower the intensity of the social and personal relationship between individuals [11].

Another negative impact of gadget usage is that it makes students unaware of their surroundings since they lose track of time. With the wide variety of apps installed on their gadgets, children will spend way more time being engrossed in those applications. Students using gadgets with various social media installed will tend to spend more time interacting on social media than studying [11], [15]. This phenomenon is a contradiction since, as per the established social and linguistic development phases, children aged 7 to 10 should be in a phase when they start looking for information and social interaction beyond their families, becoming a member of peer groups, and demanding a greater degree of freedom from their parents so that they can do their own exploration. Children aged 10 to 12 start to feel the need to have a greater degree of freedom and hone their logical and critical thinking, which will result in values and norms that guide them in actively navigating their social life. In both of these phases, children’s needs are more related to “language nutrition,” or rich linguistic interactions with adults to optimize their social and linguistic development [16]. Students will have a more optimal social development if they effectively perform social interactions with other people, such as nurturing and maintaining social relationships, displaying the ability and flexibility to cooperate, and adjusting both their behavior and attitude to meet the demands of various social contexts [17], [18]. The special construct within this domain describes children’s social interaction capabilities, including the capability to recognize social signals; interact positively with peers and adults through cooperation; listen attentively; take turns initiating and maintaining a communication; participate in efforts to solve social issues, comprehending the rights of other people; and give fair treatment to other people. Children’s social cognitive process is highly essential in how they navigate complex social interaction and is often associated with the part of the brain in charge of social cognition. This particular part of the brain reflects the growth of social cognition, as well as the structural and functional changes during the teenage phase and throughout life, which are marked by significant changes in social behaviors and environment [19].

In light of the high use of gadgets among students, Minister Yohana Yembise argues that certain protective measures must be put in place to shield them from the negative impacts of both social media and gadgets, such as excessive supply of

information, exposure to inappropriate content (e.g., pornography), inadequate practice of netiquette, and addiction to gadgets. These negative impacts affect students' social and emotional interaction since they may personify gadgets as friends capable of providing intimacy and social support [6]–[9]. For both parents and children, this condition has become a concern. As a response, students from the kindergarten level through high school (and equivalent levels) are prohibited from bringing gadgets to school. Minister Yembise states that children should not use gadgets excessively, and therefore certain limitations should be imposed. The survey company eMarketer states that the number of gadget users in Indonesia has increased significantly. Furthermore, it was predicted that Indonesia would become one of the four countries with the biggest gadget users population in the world by 2016 [4]. This is certainly our country's next major concern. Many children are used to receiving advanced gadgets from their parents, who intentionally give such devices to their children to enable them to play games and use various features offered. In addition to that, it is suspected that parents are not fully capable of operating the gadgets they have [12].

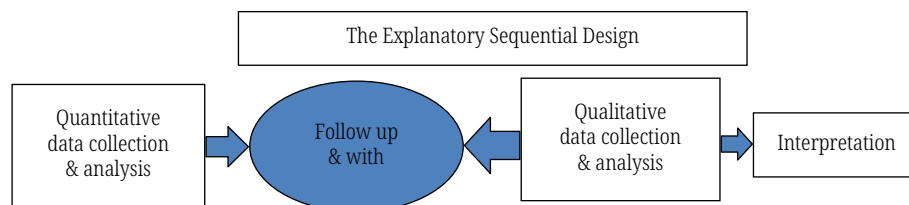
Students need to develop their communication skills and cultivate their linguistic skills, such as having an adequate vocabulary, which will enable them to have an ample choice of words to be used in both verbal and written communication. Linguistic development is a very complex process, progressing throughout people's life span. To develop their linguistic skills, it is essential for children to socially interact with their peers as well as adults. If used excessively, gadgets can affect children's language competencies, which are mostly developed through experience and imitation. In order to achieve successful linguistic skills development, such development must be supported both internally and externally. For smooth linguistic development, it is important to provide a favorable environment for children so that they can sharpen their linguistic skills, experience verbal communication, and learn from the habits of their parents as well as from the learning activities in school. Children with a speech/language disorder may face the risk of being socially isolated. They will no longer be open and receptive to the world around them, and will develop a fear that they will fail in their learning activities at school. This, in turn, can adversely affect their function in social groups and their ability to process information available externally [20].

The COVID-19 pandemic has naturally and technologically proven that online learning has become a key strategy since various media and innovations in the field of information technology must be integrated into learning activities so as to become the main source and component of learning for primary school students. If technologies such as the internet and devices such as smartphones and computers had not been optimally and effectively implemented, learning during the pandemic would have been extremely difficult [21]. The use of gadgets in learning is a must. Therefore, the formulation of relevant policies and the provision of access to adequate technology and class infrastructure to realize optimal online learning processes are needed. Recognizing this, we decided to analyze the impacts of gadget usage on the social and linguistic development of primary school students.

2 METHODOLOGY

The approach used in this research is the mixed-methods sequential explanatory design. This mixed-methods model requires researchers to have a strong background in quantitative studies or in fields relatively new to qualitative approach [22].

This approach involves a two-phase project in which we collected quantitative data during the first phase, analyzed the results, and finally used their findings to plan (or formulate) an interpretation. The overview of the approach can be seen in the figure below:



In the first phase of the research, we distributed gadget-usage questionnaires among 251 second graders and 230 fifth graders in 4 elementary schools in Central and South Jakarta. The result of this phase provided information regarding the types of participant to be chosen intentionally and included in the qualitative phase, as well as the types of questions to be asked to the participants. After the first phase, we followed up on the quantitative data by exploring the qualitative data of 8 second graders and 8 fifth graders through interviews and observation. In addition to that, qualitative data were also collected from parents and teachers. The purpose of this kind of method is to further detail the initial quantitative result. A special procedure may involve survey-data collection in the first phase, subsequent data analyses, and finally follow-up action through interviews to further elaborate the responses obtained from the survey [22]. Using the sequential explanatory data analysis technique, the research was conducted in two phases; namely, the quantitative phase and the qualitative phase. In the first phase, data were collected and analyzed using quantitative techniques. In the second phase, data were collected and analyzed qualitatively to corroborate the result of the quantitative research performed in the first phase.

The quantitative data collected were analyzed using the descriptive statistic, which is a statistic used to analyze data by describing the data collected as they are, without intending to draw a general conclusion or make a generalization. After that, the qualitative data obtained through interviews and observation were processed descriptively. The drafts used for the interviews and observation were then reviewed to prune irrelevant information. This was done by reconfirming the conclusions of the transcript of the interviews with the participants. All of the data obtained from interview and observation results directly or indirectly contribute to the results by means of providing various sources and perspectives. Therefore, a triangulation process was performed to ensure accuracy, precision, and reliability [23].

3 RESEARCH RESULTS AND DISCUSSION

Gadget usage and utilization play a role in the daily life of children and have both positive and negative impacts. Gadgets provided by parents to their children to be used as learning and playing media may have certain impacts on the linguistic and social development of those children. The following are the analyses and assessments on the impacts of gadget-usage profiles on the social and linguistic development of primary school students based on the data collected in each school—namely, SDN Pondok Labu, SD Charitas, SDN Gambir, and SD Strada. :

Table 1. Assessments of gadget usage and social and linguistic development

Rating	Daily Gadget Usage	Social Development (Social Interaction Ability)	Linguistic Development (Linguistic Skills)
4	5–6 hours	Very well	Excellent
3	4–5 hours	Well	Good
2	3–4 hours	Not very well	Fair
1	2–3 hours	Poorly	Poor

The impacts of gadget usage on the social and linguistic development of the students were calculated statistically by means of the SPSS program using the regression analysis formula. The results are as follows:

Table 2. Normality test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		8
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.73192505
Most Extreme Differences	Absolute	.384
	Positive	.384
	Negative	-.247
Test Statistic		.384
Asymp. Sig. (2-tailed)		.001 ^c

Notes: ^aTest distribution is Normal; ^bCalculated from data; ^cLilliefors Significance Correction.

Table 3. Multicollinearity test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	15.500	1.976		7.842	.000		
	Gadget Usage Intensity	-2.750	.559	-.895	-4.919	.003	1.000	1.000

Note: ^aDependent Variable: Social and Linguistic Development.

Table 4. Heteroscedasticity test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.750	.988		-.759	.477
	Gadget Usage Intensity	.375	.280	.480	1.342	.228

Note: ^aDependent Variable: RES_2.

Table 5. Autocorrelation test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.895 ^a	.801	.768	.791	1.533

Notes: ^aPredictors: (Constant), Gadget Usage Intensity; ^bDependent Variable: Social and Linguistic Development.

Table 6. Simple lineal regression test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.500	1.976		7.842	.000
	Gadget Usage Intensity	-2.750	.559	-.895	-4.919	.003

Note: ^aDependent Variable: Social and Linguistic Development.

Table 7. T test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.500	1.976		7.842	.000
	Gadget Usage Intensity	-2.750	.559	-.895	-4.919	.003

Note: ^aDependent Variable: Social and Linguistic Development.

Table 8. F test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.125	1	15.125	24.200	.003 ^b
	Residual	3.750	6	.625		
	Total	18.875	7			

Notes: ^aDependent Variable: Social and Linguistic Development; ^bPredictors: (Constant), Gadget Usage Intensity.

Table 9. Determination test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.895 ^a	.801	.768	.791

Note: ^aPredictors: (Constant), Gadget Usage Intensity.

The regression analysis calculation results in a significance value of 0.003, which is smaller than the probability (0.05). Thus, it can be concluded that gadget usage has impacts toward the social and linguistic development of the second graders.

Table 10. Normality test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		8
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.06009883
Most Extreme Differences	Absolute	.214
	Positive	.147
	Negative	-.214
Test Statistic		.214
Asymp. Sig. (2-tailed)		.200 ^{c,d}

Notes: ^aTest distribution is Normal; ^bCalculated from data; ^cLilliefors Significance Correction; ^dThis is a lower bound of the true significance.

Table 11. Multicollinearity test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	16.133	3.058		5.275	.002		
	Gadget Usage Intensity	-2.933	.836	-.820	-3.508	.013	1.000	1.000

Note: ^aDependent Variable: Social and Linguistic Development.

Table 12. Heterogeneity test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.916	1.390		.659	.534
	Gadget Usage Intensity	-.009	.380	-.010	-.023	.982

Note: ^aDependent Variable: RES_2.

Table 13. Autocorrelation test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.820 ^a	.672	.618	1.145	2.146

Notes: ^aPredictors: (Constant), Gadget Usage Intensity; ^bDependent Variable: Social and Linguistic Development.

Table 14. Simple lineal regression test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.133	3.058		5.275	.002
	Gadget Usage Intensity	-2.933	.836	-.820	-3.508	.013

Note: ^aDependent Variable: Social and Linguistic Development.

Table 15. T test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.133	3.058		5.275	.002
	Gadget Usage Intensity	-2.933	.836	-.820	-3.508	.013

Note: ^aDependent Variable: Social and Linguistic Development.

Table 16. F test

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.133	1	16.133	12.305	.013 ^b
	Residual	7.867	6	1.311		
	Total	24.000	7			

Notes: ^aDependent Variable: Social and Linguistic Development; ^bPredictors: (Constant), Gadget Usage Intensity.

Table 17. Determination test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820 ^a	.672	.618	1.145

Note: ^aPredictors: (Constant), Gadget Usage Intensity.

The regression analysis calculation results in a significance value of 0.013, which is smaller than the probability (0.05). Thus it can be concluded that gadget usage has impacts on the social and linguistic development of the fifth graders.

Table 18. Normality test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		16
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.88131696
Most Extreme Differences	Absolute	.252
	Positive	.252
	Negative	-.182
Test Statistic		.252
Asymp. Sig. (2-tailed)		.008 ^c

Notes: ^aTest distribution is Normal; ^bCalculated from data; ^cLilliefors Significance Correction.

Table 19. Multicollinearity test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	15.810	1.654		9.561	.000		
	Gadget Usage Intensity	-2.841	.460	-.855	-6.180	.000	1.000	1.000

Note: ^aDependent Variable: Social and Linguistic Development.

Table 20. Heteroscedasticity test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.005	.846		.005	.996
	Gadget Usage Intensity	.203	.235	.224	.861	.404

Note: ^aDependent Variable: RES_2.

Table 21. Autocorrelation test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.855 ^a	.732	.713	.912	2.023

Notes: ^aPredictors: (Constant), Gadget Usage Intensity; ^bDependent Variable: Social and Linguistic Development.

Table 22. Simple lineal test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.810	1.654		9.561	.000
	Gadget Usage Intensity	-2.841	.460	-.855	-6.180	.000

Note: ^aDependent Variable: Social and Linguistic Development.

Table 23. T test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.810	1.654		9.561	.000
	Gadget Usage Intensity	-2.841	.460	-.855	-6.180	.000

Note: ^aDependent Variable: Social and Linguistic Development.

Table 24. F test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.787	1	31.787	38.196	.000 ^b
	Residual	11.651	14	.832		
	Total	43.437	15			

Notes: ^aDependent Variable: Social and Linguistic Development; ^bPredictors: (Constant), Gadget Usage Intensity.

Table 25. Determination test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855 ^a	.732	.713	.912

Note: ^aPredictors: (Constant), Gadget Intensity.

The regression analysis calculation results in a significance value of 0.000, which is smaller than the probability (0.05). Thus, it can be concluded that gadget usage has impacts on the social and linguistic development of the primary school students.

The data regarding the social and linguistic development aspects of the students of the 4 primary schools—namely SDN Pondok Labu, SD Charitas, SDN Gambir, and SD Strada—were collected through interviews and observation. In this research, we determined that the sample from each school should be 4 students consisting of 2 students from the second grade and 2 students from the fifth grade, which should include 1 male student and 1 female student for each group of two. The basis for the selection of those four students is that they have a strong tendency to use gadgets. Interviews with the teachers and parents were also conducted.

4 CONCLUSION

High intensity or dominant use of gadgets in the daily life of the students indicates that gadgets have significant impacts on their social and linguistic development. Their social competencies are affected by the intensity of their gadget usage during the course of their daily activities. This is proven through the regression analysis calculation, which resulted in the regression score of 0.000. This regression score statistically indicates that gadget usage significantly impacts the social development of the primary school students in Jakarta. Furthermore, it also statistically indicates that the students' social skills and competencies are highly influenced by their use of gadgets in their daily activities. These social competencies are visible through their consistency in socially interacting with their peer groups. This social expression is shown through their ability to comprehend the emotional condition of their friends, display self-acceptance, and maintain friendship or companionship with their peers, as well as to recognize and identify the thought, feeling, and behavior of their friends, which eventually enable them to develop their capacity for well-being skills. There is another perspective built within the students' social awareness, in which they see gadgets as their friend or companion during a time of loneliness or solitude. The students get more emotional, upset, and sad when their gadgets are taken away from them, or when they are not allowed to use gadgets at home. Their social interaction with gadgets has changed their emotional relationship with gadgets, namely from "I-it" to "I-you," in which gadgets become an object having the power of a social interaction. This happens because gadgets are personified as another subject. The students believe that they are having the same relationship as the one they have with their friends or their peer groups. This is an emotional condition resulting from gadget usage. This condition must be monitored carefully so that it does not develop into excessive and uncontrollable use of gadgets, both at home and at school [1], [7], [24].

High use of gadgets during the students' daily life and learning activities suggests that gadgets contribute toward their linguistic development and skills. A regression score of 0.001 indicates that the use of gadgets by primary school students has strong impacts toward their linguistic development and skills. This means that gadget usage significantly influences their linguistic development and skills in terms of four aspects—namely, speaking, reading, writing, and listening. Gadgets provide the students with aid in writing, which should give the second graders the ability to produce writing that is easy to comprehend and understand. However, at the second grade level, or phase A of the Merdeka Curriculum, second graders show slow progress, indicated by messy handwriting that is hard to comprehend. Still, the impacts of gadgets or technology in relation to access to learning are helping both the students and teachers to achieve the goals of the curriculum. Thus, the Merdeka Mengajar platform is an alternative learning medium made possible by the convenience of technology with the ultimate goal of enabling both the students and teachers to improve their skills and competencies in realizing the objectives of the curriculum self-sufficiently [25], [26].

The level of social and linguistic development impacted by the use of gadgets differs between the second graders and the fifth graders. In terms of social interaction, the fifth graders have a bigger circle of friendship compared with the second graders. The fifth graders also use more various features and content to learn together with their peers. The second graders still show self-centeredness since they still prefer to enjoy being alone with their gadgets. In terms of linguistic competencies, the fifth graders have richer and more varied vocabulary compared with the second graders. Furthermore, they are more adept in speaking and listening. They are more capable of using certain sentences depending on the context and situation,

and expressing their ideas and arguments in a detailed and systematic manner. In terms of the ability to write, the fifth graders are able to produce more comprehensive writing based on rich and creative ideas. In comparison, the second graders are still limited in terms of ideas and forms since they depend on the instructions given by their teachers. As for self-reliance, the fifth graders have stronger autonomy in utilizing gadgets for the purpose of learning, while the second graders still need to be assisted by their parents in using gadgets. To develop self-reliance, value habituation plays an important role since the behaviors resulting from gadget usage are mostly determined by the learning environment as well as the ability of families and schools in implementing value and behavior standards to prevent the negative impacts and excessive use of gadgets among primary school students [27]–[29].

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