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DIFFERENCES AND DETERMINATION OF GADGET ADDICTION ON EMOTIONAL INTELLIGENCE IN SOUTH JAKARTA

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Abstract: This study aims to look at the differences and determination of gadget addiction on the emotional intelligence of students in the South Jakarta Middle School. The sample of this research is South Jakarta Middle School students. The sampling technique used is proportionate Area Random Sampling. The analytical tool that will be used in this study is the average difference test and regression test to see the determination of its influence. The results showed there were differences in gadget addiction between girls and boys as well as emotional intelligence. In grade level differences, in terms of gadget addiction and emotional intelligence, it can be concluded that there is no difference between grade 1 & 2, 1 & 3 and 2 & 3 in South Jakarta Middle School. The results showed that there was a negative and significant effect of gadget addiction on emotional intelligence in junior high school students in South Jakarta.

Keywords: Gadgets Addiction, Emotional Intelligence, Adolescent

INTRODUCTION

Physical, neurological, cognitive and socio psychological development happens significantly in the Adolescent period according to Hapunda, Mahama, Mesurado, Verma & Koller (2019). Furthermore, Karibeeran & Mohanty (2019) said that emotionality is heightened in adolescent periods. They explain that indelible marks will be left on their behaviour and personality if the adolescents cannot properly perceive, understand, regulate and function with their emotions. It is during adolescence, the transition from childhood to adulthood is most important. An Individual gains the skill to think ahead than this moment, predict the consequences and the forthcomings and understand the relationships' complexity in this adolescent period and possibly intense positive and negative

emotional reactions often resulted from new experience and unfamiliar situations they encounter. Sarwono (2012) also explains that as a result of physical changes, hormones, personality development and emotional tension that increases and unstable emotion, makes adolescence a period filled with pressure and stress. Therefore, it is important to have the emotional intelligence skills for regulating their emotions and behaviour (Karibeeran & Mohanty, 2019).

The Important topic of personality development in adolescence is the search for self-identity. Erikson in Papalia and Feldman (2015) mention that during adolescence stage the adolescent will re-evaluate his/her identity and try to figure out exactly his/her identity and adolescents are vulnerable in emotional state and managing emotion is something that they usually have difficulties to do in this stage. The meaning of seeking self-identity is the process of becoming a unique person with an important role in life (Erikson in Papalia & Feldman, 2015) and one of the aspects related to personality maturity and adversity is Emotional Intelligence or Emotional Quotient (EQ) (Mangkunegara and Puspita wati, 2015). It is during this stage that the adolescent will re-examine his identity and try to find out exactly who he or she is. Emotional intelligence plays an important role in this phase.

Santrock (2011) stated that adolescence means a transition period between childhood and adulthood which includes biological, cognitive, and social-emotional changes. The task of adolescent development includes the formation of identity, self-image and social adaptation often fails due to internet addiction. These behavior symptoms of addiction can be seen in the individuals' life. For example, experiencing loss control, feelings of anger, self-withdrawal and family conflict. In addition, there are more severe clinical conditions also related to internet addiction such as dysthymic, bipolar, affective, social anxiety disorder, and severe depression (Cerniglia, Zoratto, Cimino, Laviola, Ammaniti, and Adriani, 2017).

Moreover, Mustafa in his study (2011) showed that students use the internet for about six hours a day and are reported to have psychological complaints, compared to students who do not. Research conducted by Azher (2014), explained that internet addiction influences anxiety in individuals. Research conducted by Akin (2012) showed internet

addiction is positively related to decreased social interaction, depression, loneliness, and low self-esteem because individuals addicted to the internet will spend most of their time using the internet through gadgets.

In terms of Emotional Intelligence, it is formed from two factors which are internal factors and external factors. Internal factor is the factor that exists inside the person, that is affected by the person's brain condition which has the role of controlling a person's emotion. While external control comes from the outside of the individual such as the influence of family, school and social surroundings (Salovey in Goleman, 2015).

Regarding internal factors, Desiningrum, Indriana dan Siswanti (2017) study mentioned that the intensity of gadget usage could damage adolescents' emotional brain so they can't have empathy, express and manage their emotions properly.

From the external factors of emotional intelligence, the tendency of excessive and improper gadget usage would make an individual become ignorant to his/her surroundings. In Adolescence, this ignorance would unsharpened the aspects of emotional intelligence which are his/her ability to have empathy, properly express his/her emotions, manage his/her emotion accordingly (Vélez, Olivencia, & Zuazua, 2017). Besides that, Hasanah and Kumalasari (in Saroinsong, 2016) suggested that the use of gadgets has a negative effect on interpersonal skills if used too often. The impact of excessive gadget usage on students often causes problems in the learning process (Nurmalasari & Wulandari, 2018). The prevalence of internet addiction through gadgets can be a serious crisis in youth especially in personal life, family relationships, social behavior and academic status (Hamissi, Babaie, Hosseini, & Babaie, 2013).

The emergence of gadgets makes many teenagers having more fun and being busy with the features offered by the gadget. They are much more likely to interact through social media, rather than having face to face interaction. These behavior symptoms tell that a person is far more concerned about something that happens with their smartphones compared to their own surrounding environment, which then becomes a problem for the users (Salehan & Neghaban, 2013). Even the existence of a smartphone also leads a new effect on the behavior of the users (Bian & Leung, 2014). The new behavior of the gadget users are they

become addicted to the gadget, or what is called a smartphone addiction. Gadget addiction is defined as an addictive behavior, a loss of self-control due to preoccupation and excessive obsession with gadget use (Kim. M, Kim. H, Kim. K, Ju, Choi & Yu, 2015).

Internet users around the world are dominated by teenagers aged 12 to 17 years. The percentage is 93%. Most Indonesian use gadgets in everyday life that can be seen at all ages, including teenagers. Besides that, the data obtained from the Ministry of Communication and Information of the Republic of Indonesia shows that internet users and gadget usage are dominated by teenagers, which reach up to 80%. These teenagers use gadgets for entertainment, shopping, social media and so on (Sherlyanita & Rakhmawati, 2016). The most surprising finding Kasyi from the APJII (2014) survey was the percentage of internet users who are in the group age 10-14 which reached 100 percent with a total of 768 thousand.

The Indonesian Internet Service Users Association/ APJII (2016) provides information consisting of a report stating that internet users accessed through gadgets in Indonesia are dominated by teenagers aged 13-18 years who live in Java islands. Additionally, around 44.16% of the total teenager's internet users are 75.50%. The large number of internet users accessing the internet through gadgets used for texting short messages (chatting), accessing social media, and searching to view images and videos, then downloading the images and videos. Jakarta is the region with the largest number of gadget users in Indonesia (Indonesian Internet Service Users Association, 2016). South Jakarta is the region with the second highest number of SMPs (Junior High Schools) in the DKI Jakarta area (Suku Dinas Pendidikan Wilayah 1 Jakarta Selatan, 2018). Therefore, researchers chose South Jakarta as a place to conduct this research. Aisyah's research results (2015) showed that the use of gadgets in South Jakarta is quite significant where 80% users use the internet access as a means of playing and the users have started to access the internet at an early age. The negative effect related to internet usage through electronic media in South Jakarta is also evident in the results of Murti's research in Utama, Abraham, Susana, Alfian and Supraptiknya (2016). Their study showed that the proportion of pornography exposure in one private school student in South Jakarta is high (50, 7%). This book also mentioned that Supriati and Sikawati's research showed that exposure to pornography is obtained through

electronic media with internet access such as Google, YouTube, yahoo etc.

Based on the results of prior observations and interviews conducted by researchers to several schools in South Jakarta, it is very obvious that students are very active in using their gadgets. The results of interviews and observations in schools located in Kebayoran Lama South Jakarta showed a group of students who occupied themselves by playing gadgets and did not listen to the instructions given by the teacher in the class. The researcher also conducted a preliminary interview with one of the teachers who gave a statement that when the learning hours began the teacher started explaining the subject and all students studied seriously. However, when the teacher paused their teaching for a while to prepare the next material, there were some students who were playing gadget with his seatmate. This phenomenon also appears in the Kebayoran Baru South Jakarta although there are strict regulations that do not allow students to carry gadgets. However, there are still some students who are likely to break the rules or still carry gadgets to school and operate gadgets secretly without the teacher's knowledge. These behaviors showed that students possess low self-control in using gadgets because the students use the gadgets inappropriately. Self –control itself is one of the factors that influence the gadget addiction level (Yuwanto, 2013).

The similar situation also occurred in the Pesanggrahan South Jakarta. The students stated that they used gadgets in order to find additional references from learning materials as well as they took the advantages from facilities or applications contained in their gadget which attracted the students to use the gadgets as entertainment and communication with others through social media due to the ease of use. Most of the students use gadgets as a release from their routine learning activities in the school because the 2013 curriculum requires the students to study 38 hours outside the grade as an additional activity such as extracurricular activities. So that most students decide to use gadgets as entertainment and spend their free time as a result of their tiredness from studying When students feel under pressure facing daily tests and school exams, students tend to use gadgets as a release. From this phenomenon, sensation seeking can be used as other factors to determine the high gadget addiction level. Students who have high sensation seeking tend to be bored more easily in doing routine activities, such as going to school,

and studying. The results of the initial survey showed that 81.77% of Junior High School students in South Jakarta were addicted to gadgets which is average and this percentage is likely to be higher.

PROBLEM STATEMENT

Based on the background stated above and by the phenomenon that the digital revolution with rapid growth of electronic devices have greatly expose and affect teenagers (Kurniasanti, Assandi., Ismail., Nasrun, and Wiguna, 2019) also by the fact from Brown and also AC Nielsen researches results that mentioned Indonesia has the longest screen time duration, with 91% of the are smartphone users with 55% users are teenager (Chasanah & Kilis, 2018), it becomes interesting for the researchers to explore more the differences of the gadgets addiction among teenagers, specifically based on gender and grade level at school. With regards to the importance of emotional Intelligence in adolescents and the considerable use of gadgets in adolescents, researchers aimed to see the determination of gadget addiction on the adolescence emotional quotient. Moreover, regarding the development of Emotional Intelligence that have only few researches that focused on them (Esnaola, Lorena, Iker, and Marta, 2017) therefore we interested to explore more about the emotional intelligence in adolescence particularly in terms of gender and grade level at school.

HYPOTHESES

The hypotheses of this research are:

H1: There is a difference between the level of gadget addiction and emotional intelligence in junior high school students in the South Jakarta area.

H2: There is a negative and significant effect of gadget addiction on emotional intelligence in junior high school students in the South Jakarta area.

RESEARCH METHODS

This study uses quantitative research specifically comparative type to see the comparison of the average of gadget addiction and emotional intelligence. This study also uses an associative type of research to see the determination of gadget addiction to the students' emotional intelligence. The participants of this research were taken from Junior High school students in South Jakarta particularly grades 1,2,3.

POPULATION AND SAMPLES

The population chosen by the researchers were students in grades 1, 2 and 3. The population chosen by the researchers was 68133 students attending the SMP Jakarta area in the South Jakarta area.

The researchers used Proportionate Area Random Sampling technique. The way to calculate it is the number of samples in each stratum is proportional to the number of population members in each stratum population (Yusuf, 2014). The sample in this study consisted of several regions and then the calculations were put together with a total sample of 3061 students.

INSTRUMENTS

The gadget addiction measurement tool was adapted from Eliya's research (2018) with a scale based on 5 aspects of gadget addiction level based on Young in Wijanarko (2016). They are thinking too much about gadgets, obsess to achieve satisfaction through gadgets, unable to control themselves, anxious when not using gadgets, spend too much time in using gadget. Tool measuring emotional intelligence was adapted from Yanti's (2018), using Emotional Intelligence Self Evaluation (Eise) Scale which is based on Goleman five aspects (2015) particularly: self - awareness, self-regulation, motivating over self, empathy, and social skills. The researcher used the simple T-test and linear regression test in testing the hypothesis.

RESULT

Comparative Findings

In the first step is processing the differences in gadget addition. The result is shown in the table below. In testing differences in gadget addiction between girls and boys, the value of significant (2-tailed) showed .012 below .05, it can be concluded that there is a difference level of gadget addiction based on gender among South Jakarta junior high school students.

Table 1: Result of the differences in Gadget Addition between Girls and Boys

Hypothesis	F	Sig.	t	df	Sig. (2-tailed)	Results
There is no difference in gadget addiction by gender	0.5	.479	2.504	3059	.012	There is a difference

The next test is the difference in gadget addiction based on grade level. T test results in grade 1 and 2 show the value of sig. (2-tailed) of .795 above .05, it can be concluded that there is no difference in gadget addiction differences between grade 1 and 2 in south Jakarta Junior High School Students. The results of data processing for testing differences in gadget addiction between grade 1 and 3 also show that there is no difference between the two which is indicated by the value of sig. (2-tailed) of .122 above .05. No difference can also be deduced for grade 2 and 3 with the indicated sig. (2-tailed) value of .160 above .05. Furthermore, researchers tested the differences in the emotional intelligence of junior high school students in South Jakarta based on gender and grade level at school.

Table 2: Result of the Difference in Gadget Addiction Based on Grade

There is no difference in gadget addiction by grade	F	Sig.	t	df	Sig. (2-tailed)	Results
Grade1 and 2	0.604	0.437	0.26	2732	0.795	There is no difference
Grade 1 and 3	6.032	0.014	1.549	1843	0.122	There is no difference
Grade 2 and 3	4.16	0.042	1.407	1541	0.16	There is no difference

Firstly, researchers compared the differences in emotional intelligence between the sexes of girls and boys. The test results show that the value of sig. (2-tailed) of .00 below .05, it can be concluded that there are differences in emotional intelligence based on gender among junior high school students in South Jakarta.

Table 3: Result of the Differences in Emotional Intelligence between Girls and Boys

Hypothesis	F	Sig.	t	df	Sig. (2-tailed)	Results
There is no difference in emotional intelligence by gender	0.984	0.321	3.853	3059	0.00	There is a difference

Researchers also tested the differences in emotional intelligence grade 1 and 2. The results showed that there was no difference in emotional intelligence between grade 1 and 2, this was evidenced by the value of sig. (2-tailed) of 0.993 above 0.05. Further results also showed that there were no differences in emotional intelligence between grade 1 and 3, as evidenced by the value of sig. (2-tailed) of 0.548 above 0.05. Researchers also examined the differences in emotional intelligence between grades 2 & 3. The results of data processing showed that the value of sig. (2-tailed) was 0.525 above 0.05, meaning that there was no difference in emotional intelligence between grade 2 & 3 of junior high school students in South Jakarta.

Table 6. Result of the Difference in Emotional Intelligence Based on Grade

There is no difference in emotional intelligence by grade	F	Sig.	t	df	Sig. (2-tailed)	Results
Grade1 and 2	6.691	.01	-0.009	2732	.993	There is no difference
Grade 1 and 3	9.714	.002	0.601	1843	.548	There is no difference
Grade 2 and 3	2.442	.118	0.636	1541	.525	There is no difference

Linear regression analysis of Internet addiction and Emotional Intelligence

The next step is to show the effect of gadget addictions for junior high school students in South Jakarta and their emotional intelligence. The results of data processing showed that the Beta value is -0.107 and a t value of -4.076 and a significance of .00 below .05. Based on these results, it can be concluded that gadget addiction has a significant negative effect on emotional intelligence.

Table 9. Result of Linear regression

Model		Unstandardized Coefficients B	t	Sig.
1	(Constant)	33.676	29.865	0
	Gadget Addiction	-0.107	-4.076	0

DISCUSSION

Researchers conducted differences tests on gadget addiction among South Jakarta Junior Highschool Students based on gender and grade level. In terms of gender, the results showed there is a different level of gadget addiction based on gender among South Jakarta junior high school students.More over, the difference can be seen from male students who have an average score 46.3 in general which is higher than female students who have an average score 41.5. Even though the addiction level is average (36-47), both averages are proven differently by the significant score below 0.05.

The survey results of the Indonesian Internet Service Users Association/ APJII (2017) reported that internet users accessed the internet through *gadgets* were dominated by teenagers aged 13-18 years who were in the Java islands, around 44.16% of the total teenager internet users 75.50%. Research conducted by Li et al. (2014) showed that male students used more internet access (61.7%) compared to female students (45.7%). Prior studies conducted by Wahid in Ratnasari (2017) suggested that there were different usage patterns in using the internet based on gender. These are the most common activities that most males do when using the internet, such as sending e-mail (80.25%), chatting (57.78%), accessing university sites (80.99%), reading mass media online (62.96%), trying software (24.44%), downloading software (47.16%), shopping (5.43%), seeking entertainment (72.35%), studying (85.93%), seeking for job information (32.10%), and visiting pornography sites (26.17%).

Nevertheless, in terms of grade level, this study results showed there is no difference between gadget addiction levels among Junior High School students in South Jakarta based on grade level. Furthermore, based on our interview with the students, regardless of their grade level, most junior High school students in South Jakarta need to use the gadgets to

contact their parents in order to prevent themselves from kidnapping or brawling or other crimes. Additionally, these students also use their gadgets as a tool of learning as well as an entertainment. Furthermore, to support the era 4.0, Junior High School students in South Jakarta and gadgets are also inseparable. The results showed no difference when testing gadget addiction in each grade. It means that the grades have the same tendency in using gadgets that are medium or average. The use of mobile phones is no longer as a luxury item so it can be purchased by various groups of people for their own needs. Therefore, teenagers never miss using gadgets when they do not have the teacher in the grade. In other words, they used gadgets in their free time at school.

The results of the analysis of Hamzah, Muflih & Puniawan (2017) showed that the people who have an average level of gadget addiction use Android smartphones and Blackberry OS more than 3 hours / day (> 3 hours / day). People more often use gadgets for social media and playing games, finding information and learning. Nevertheless, the students tended to use the gadgets quite negatively when they were at home or recess at school. There were 121 teenagers (58.5%) who use smartphones almost every day at home, in their community or even when they study in the grade (Suyanto in Hamzah, Muflih & Puniawan, 2017). Teenagers prefer to use smartphones mostly for playing social media and playing games. Social media commonly used by teenagers are Facebook, Twitter, Path, and Instagram. Teenagers spend 2.5 hours every day to browse the internet and play games online. Teenagers spend 1.5-3 hours every day just to browse social media such as Facebook, Twitter, Path, Instagram and We-chat (Zimic in Hamzah, Muflih & Puniawan, 2017).

After gadget addiction differences, the researchers conducted difference tests on emotional intelligence based on gender and grade level among South Jakarta Junior High School students. In terms of gender, the test results show that there is a difference in emotional intelligence of South Jakarta junior high school students based on gender. Male students have an average of emotional intelligence with a score of 59. This number means male students belong to the average category. Different from male students, female students are at the number 60 which means female students belong to a good category. This is consistent with Esnaola, Lorena, Iker, and Marta (2017) study on emotional development that show differences between boys and girls in the interpersonal dimension,

with girls scoring higher than boys. Moreover, in Esnaola, Lorena, Iker, and Marta (2017) also mention that most studies on the influence of gender on emotional intelligence of adolescence shows that there is a certain difference between female and male adolescence. it is stated that women are more emotionally aware, display more empathy and relate better to others, whereas men are better at managing and regulating emotions.

Moreover, in terms of grade level, the results show that there is no difference in emotional intelligence of South Jakarta Junior High School Students based on grades level. Esnaola mentions that regarding Emotional development, in her study, there was little substantial change in self-perception in terms of emotional development over the time period analysed among any of the age groups/grades studied. Moreover Nook, Sasse, Lambert, McLaughlin and Somerville (2018) research show that different from adults and children who had higher emotion differentiation than adolescents, adolescents have lower emotion differentiation. It is because they experience many emotions simultaneously. Adolescence, regardless of their grade level, were still in the process of learning how to differentiate those emotions that they experience. This might explain why being an adolescent can feel like being on an emotional roller-coaster; so many emotions coming and going at the same time, without having fully developed the skills to handle those emotions (Nook, Sasse, Lambert, McLaughlin and Somerville, 2018). As mentioned also in Karibeeran & Mohanty (2019) that emotionality is heightened in adolescent periods.

Based on the results of data analysis in this study, the regression coefficient value (B) -0.107 and t-value of -4.076 and a significance of 0.00 below 0.05. Related to this hypothesis, this study showed that "There is a negative and significant influence of *gadget* addiction on emotional intelligence towards Junior High School students located in South Jakarta", accepted. Moreover, the value of beta is -0, 107 indicating that there is a negative and significant effect between *gadget* addictions with emotional intelligence. This means that the higher the *gadget* addiction level is, the lower the level of emotional intelligence is. In contrast, the lower the gadget addiction level is, the higher emotional intelligence is.

This condition can occur because emotional intelligence will be established when someone shows an effort to give a good impression about himself, able to express his own emotions, try to involve with the environment, self- control toward feelings and be able to express emotional reactions based on the situations and conditions. So that interactions with others can be established and developed smoothly and effectively (Fatimah, 2010). Thus, the students are able to communicate well, both with the family and school environment, express their emotions well, participate in the environment, and are able to express and control their feelings based on the situations. Moreover, they do not occupy themselves with the gadgets. Therefore, the students' emotional intelligence will be high.

On the other hand, Vélez, Olivencia, & Zuazua (2017) explained that people who use gadgets excessively make the user ignore their surrounding environment. So, if the level of gadget addiction is high, the teenagers tend to become ignorant toward their surroundings. In other words, the teenagers do not pay attention well toward their surroundings. Additionally, the teenagers are not able to empathize, express their emotions appropriately, manage their emotions which those aspects are part of emotional intelligence.

Emotional Intelligence itself is formed by two factors, internal factors and external factors. Salovey in Goleman (2015) mentioned that an internal factor exists inside the person that is affected by the person's brain condition which has the role of controlling a person's emotion and external control exists outside of the individual such as the influence of family, school and social surroundings.

In terms of internal factors, it is mentioned in Desiningrum, Indriana dan Siswanti (2017) study that the intensity of gadget usage could damage adolescents' emotional brain so they can't have empathy, express and manage their emotions properly. As from the external factors, the tendency of excessive and improper gadget usage would make an individual become ignorant to his/her surroundings. In Adolescence, this ignorance would unsharpened the aspects of emotional intelligence which are his/her ability to have empathy, properly express his/her emotions, manage his/her emotion accordingly (Vélez, Olivencia, & Zuazua, 2017). Besides that, Hasanah and Kumalasari (in Saroinsong,

2016) suggested that the use of gadgets has a negative effect on interpersonal skills if used too often. The prevalence of internet addiction through gadgets can be a serious crisis in youth especially in personal life, family relationships, social behavior and academic status (Hamissi, Babaie, Hosseini, & Babaie, 2013).

Moreover, the results of this study are also in line from previous studies conducted by Rahmadi (2017) showing that the higher the level of use of *gadget* applications, the lower the emotional intelligence of students. Thus, the students sometimes fail to understand the feelings of themselves and people around them because of the gadgets. For example, someone who spends most of his time in front of the screen, specifically gadgets is likely to have difficulties in recognizing the emotions (Ristiyani & Rahmawati, 2017). Recognizing self-emotions is an aspect of emotional intelligence which manages emotions meaning the ability of individuals to deal with feelings so that people can express their emotions appropriately or harmoniously. So, a person can achieve the individual balance within herself or himself. Excessive emotions which increase for too long will disturb emotion stability (Goleman, 2015).

The results of this study indicated that *gadget* addiction has a negative influence on emotional intelligence. The findings in this study are supported by previous research conducted by Kholidiyah and Yuwono (2013). Their research showed that there was a significant relationship between playing *g*ames online (using gadgets) with emotional intelligence. The higher the intensity of playing games online, the lower the emotional intelligence, in contrast, the lower the intensity of playing online games is, the higher the emotional intelligence is. The study conducted by Ristiyani dan Rahmawati (2017) also showed there was a significant negative relationship between the gadget addiction level of using social network applications and emotional intelligence. From the explanation above, it is obvious that there are negative influences which are significant between gadget addiction and emotional intelligence towards Junior High School Students located in South Jakarta.

CONCLUSIONS AND SUGGESTIONS

As the results found in this study, it can be concluded that there is a difference in gadget addiction between males and females as well as emotional intelligence. Regarding gadget addiction and emotional

intelligence in terms of grade level at school differences, it can be concluded that there is no difference among grade 1 & 2, 1 & 3 and 2 & 3 among Junior High School students in South Jakarta.

Based on the result and data analysis of this study, there was negative and significant influence regarding the effect of gadget addiction on emotional intelligence among Junior High School students in South Jakarta. In other words, the higher gadget addiction level, the lower emotional intelligence. In contrast, the lower the gadget addiction level is, the higher the emotional intelligence.

Further researchers are suggested to conduct research emphasizing on other variables such as school rules, extracurricular activities, and counseling teachers in preventing students from gadget addiction and develop students' emotional intelligence as well. In addition, Researchers expand the area in obtaining data collection. Furthermore, future studies are suggested to take samples from other development phases in order to see the difference from each developmental phase.

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