



The Relationship Between the Duration of Gadget Use and Students' Ability to Concentrate

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ABSTRACT

Background. The use of gadgets is increasing day by day, from children to adults. The use of gadgets certainly has a positive impact and also a negative impact. Children who are still in school will feel the effects of gadget use. The use of gadgets in proper control will have a good effect on the child's growth and development process. But on the other hand, excessive use of gadgets will affect children's development. In addition, it will also affect the social conditions of children in everyday life.

Purpose This study aims to determine how much the relationship between the duration of gadget use and students' concentration ability. Gadgets at this time are not a foreign thing, wise use of gadgets will provide benefits for users. The use of gadgets in different durations will have a different impact on their use.

Method. The method used in this research is quantitative. Quantitative methods characterized by the use of numbers in the process will help measure the data obtained. Data collection is in the form of distributing questionnaires made in the form of google form. This will make it easier and shorten the time for collection. Google form contains several questions that will be responded to by teachers and students. The statements presented are matters relating to the relationship between gadget use and student concentration.

Results. The results of this study explain the relationship between the duration of gadget use and students' concentration levels. Using gadgets wisely in time management will give the impression of not being too dependent and focus is maintained. However, excessive intensity of gadget use will have an impact on student health. Students will fail to focus on learning, even students will experience mental health problems. It takes the right strategy in using gadgets, such as setting the duration of use, access permissions, and many more.

Conclusion his study can be concluded that the duration of gadget use in students will affect the level of concentration. The duration of use that is controlled and not excessive will make students concentrate more. However, excessive use of gadgets and no control from parents or teachers will adversely affect student concentration which will deteriorate.

KEYWORDS

Concentration, Duration, Gadget

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INTRODUCTION

The development of digital technology will affect all aspects of life. The emergence of various new innovations from digital technology can bring positive and negative



advancement of technology, almost all people have gadgets. impacts in everyday life. In the past, only the upper class or wealthy people could have gadgets. With the Starting from toddlers to the elderly are accustomed to the presence of gadgets at this time. Gadget is a term given to small electronic devices with special functions. Gadgets are sophisticated electronic devices that are created and present various applications that support activities in cyberspace. Gadgets will continue to experience updates from day to day. Every once in a while there will be a gadget model with all the different advantages (Azad, 2019). Gadgets will support various forms of activities carried out, ranging from access to science, promotion, information, and many more. But on the other hand, the use of gadgets must still have limits and rules, so as not to conclude gaps or misuse of functions.

The duration of gadget use is the amount of time users spend looking at layers or using electronic devices such as cell phones, tablets, laptops, or televisions (Ayu, 2020). The duration of gadget use differs depending on a person's age, needs, and activities. However, excessive use of gadgets will have a negative impact on physical and mental health (Tyagi, 2021). Continuous use of gadgets will have a major effect on life patterns, such as concentratio (Bos, 2019). Concentration is the level of one's focus on something at a certain time. Concentration is also a person's ability to focus their attention and thoughts on things that are happening at that time (Ananth, 2019). School learning requires concentration which will affect students' understanding of the material. In addition to gaining understanding, it is also useful for improving memory, as well as academic achievement (Thorupunoori, 2021). Concentration is easily disrupted if students do not focus their attention on learning (Ulla, 2021). Concentration in learning has many factors that can affect it. Some of these factors range from family problems, problems with friends, family, interests, motivation, environment, health, emotions, and also the use of electronic devices (Bogucki, 2019), The use of electronic devices during learning is sometimes misused by students. Some teachers sometimes instruct them to search or open materials, but students often use gadgets to open applications such as social media or games. This will damage concentration in learning.

Research on the relationship between the duration of gadget use and students' concentration ability has deep reasons to be researched. Gadget which is an electronic device will not be separated in daily life. Therefore, it is necessary to manage the use of gadgets in activities, especially for students. The relationship between the duration of gadget use will have an impact on the activities and activities of students (Aalbers, 2019). If students are unable to control the use of gadgets, it can result in addiction, insomnia, physical and mental health problems, decreased concentration, and many more (Cooper, 2020). The ability to concentrate is needed by students which is useful for focusing on learning or activities carried out. When the use of gadgets is uncontrollable, this will have a significant impact on student concentration (Bagali, 2023; Citra, 2023). Students will find it difficult to focus on the teacher during learning because gadgets are able to divert attention and focus on students. This will have an effect on the level of academic achievement of students, as well as many negative impacts of using gadgets unwisely.

This research will contribute to the use of gadgets in order to understand the things that need to be paid attention to. The right strategy in the use of gadgets for students will help utilize technology correctly and appropriately. This needs to be considered so that addictions that pose a fatal risk to students do not occur (Kozhevnikova, 2022). Excessive use of gadgets will make students dependent (Arora, 2019; Bagali, 2023). Students will not be able to think critically, logically, and dynamically due to dependence. In addition to this aspect, motivation and education from parents and teachers are needed in the use of gadgets (Alsayed, 2020). This study will also help analyze the effects that will occur in the excessive use of gadgets and other supporting aspects. So that teachers and parents can identify the risks, impacts, and benefits of gadget use (Larionova, 2023). Student concentration is not

only from gadgets but many factors. But on the other hand, the sophistication of the digital era has a great influence in the world of education and the surrounding environment. So it requires handling, wise action, and proper utilization in its use.

The innovation in this study is the relationship between study duration and student concentration ability. In previous research, namely research from (Wahyuni, 2019) titled *The relationship between the duration of playing gadget and mental emotional state of elementary school students* (The Relationship of Duration of Playing Gadgets with Mental Emotional State of Elementary School Students). The study explains the relationship between the duration of playing gadgets and the mental emotional state of elementary school students. The novelty of this research is in the aspect of the influence of the duration of the study. This study focuses more on the concentration ability of students related to the duration of gadget use.

The purpose of this study was conducted to determine the relationship between the duration of gadget use and students' concentration ability. When students are able to use technology wisely and under control, this will have an impact on the progress that occurs in students. Gadgets, which are already owned by all circles, must be conditioned in their use. Time management is needed in using gadgets to avoid addiction. If the use of gadgets for a long time in a row will have an impact on the decline in concentration of students (Filkina, 2022; Kadir, 2023). In addition, it will also curtail students' interactions with the outside world, such as friends, teachers, parents, family, and the surrounding environment. So that this research will provide an overview to parents, teachers, and students against the excessive use of gadgets.

The researcher hopes that there will be a rapid change in the use of gadgets for students and other children. Adjusting the use and controlling the use of gadgets is expected to anticipate the risks and problems that will occur in the future. The researcher's biggest hope is that this article can provide benefits to readers. In addition, the researcher hopes that this article can be a reference material to overcome the problem of gadget addiction. Hopefully this article can be taken into consideration for further research related to the duration of gadget use. So that gaps in the world of education, social, and the surrounding environment can be overcome together. And thanks to all those who have helped in writing this article.

RESEARCH METHODOLOGY

Research Design

This research uses a quantitative research design. This will present data in the form of numbers obtained from the acquisition of subject responses. Questions were inputted totaling 20 items into Google form. Google form is a medium used by researchers to receive answers to each question (Ali, 2021; Bauer, 2021; Bullich, 2020). In this case, the statement includes the relationship between the duration of gadget use and the level of student concentration. This method is used in order to formulate and measure the views of students and teachers on the relationship between the duration of gadget use and student concentration. Questionnaires will be distributed via whatsapp which is useful for saving costs and time. The stages in this study began with the presentation of 20 questions in the form of a questionnaire presented in google form. The results of the questionnaire distribution will be transferred to excel in the form of a list. Furthermore, it is managed with SPSS. Researchers will calculate the highest response to the questions that appear.

Research Procedure

This research will conduct a series of systematic steps in collecting, analyzing, and providing understanding of the data collected. This research begins with asking permission from teachers and students who will be asked questions. Then the researcher distributes google form until the desired

response is obtained. On the other hand, researchers use language that is good and easy to understand so that teachers and students can understand when filling out. This will provide comfort and also a fast time in filling out the questionnaire. This process will facilitate research in collecting data and testing it. So that it can find out various problems caused by differences in the duration of gadget use on students' concentration levels.

Research Subjects

This study made the subject of teachers and students selected from various institutions. The role of the researcher is to collect every answer given by teachers and students. This study is considered very important to do to find out the relationship between the duration of gadget use and the level of student concentration. In addition, it will also be useful for consideration of teachers and parents in regulating the time of gadget use for students. On the other hand, it will also provide an overview of the advantages and disadvantages of using gadgets in everyday life. This is an effort to anticipate the risks that arise. So that teachers, parents, and students are able to control the use of gadgets in everyday life.

Research Ethics

Research must have a research ethic. Research ethics will help a researcher to conduct research properly and correctly. Research ethics will show how to behave, manners, principles, and also norms as a basis for behavior by researchers. When conducting research, this will have a major effect on the researcher and the subject under study. The form of this is a sense of security and comfort when conducting research. So that the required information can be retrieved, and information from the subject is conveyed appropriately. This process will have the impact of collecting information easily and quickly. Another aspect that supports is using polite language and does not contain elements of violence. In addition, it also asks permission from the subject to be studied. The data collected will be kept safe from recognition of private property rights by others. This research was conducted fairly without taking sides with individuals. In asking for information, the researcher did not impose the will on the subject so that there would be no sense of threat. Furthermore, the researcher appreciates all those who helped in the implementation of this research.

Data Collection Technique

Data collection in this study used a questionnaire in the form of google from which was distributed via whatsapp. This data collection aims to provide convenience in answering and recapitulating answers from respondents. In addition, this will also save time and costs in data collection. This is because all activities are based online without having to meet face to face. The data collected will be entered into a table in the form of a response using a percentage on each statement. The results of the statement are then imported into excel in the form of numbers. This is because the next stage will use the SPSS application as a quantitative data processing tool. The purpose of this is to show the response of the subject to the relationship between the duration of gadget use and the level of student concentration.

Table 1 Sample Population

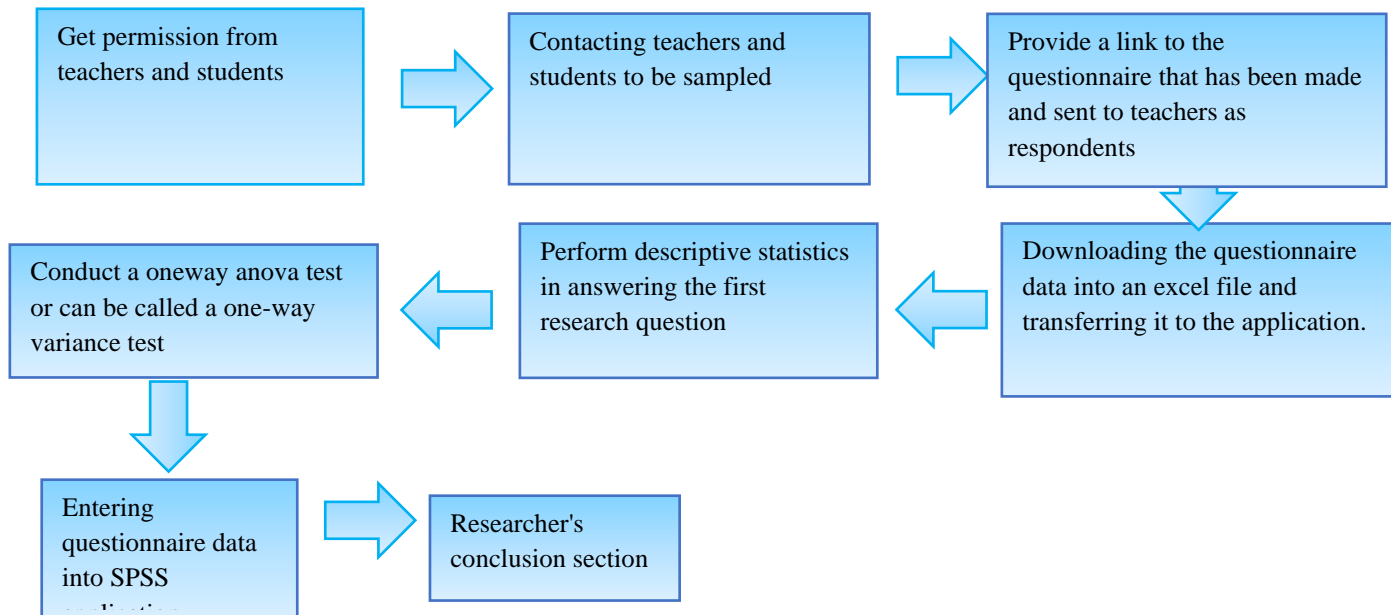
NO	Department of	Number of Participants	Percentage
1.	Teacher	10	40%
2.	Students	15	60%

Table 2 Research Sample Details

No	Choice Category	Tier Number
1	Strongly Agree (5)	>90%

2	Agree (4)	70-80%
3	Disagree (3)	50-60%
4	Strongly Disagree (2)	0-40%
Total		100%

Data collection and data analysis tools



RESULT AND DISCUSSION

Table 3 Acquisition of responses from teachers on the relationship between the duration of gadget use and student concentration

NO	Question	SS (%)	S (%)	TS (%)	STS (%)
1	Excessive use of gadgets can interfere with students' concentration on learning	67%	33%	0%	0%
2	Uncontrolled use of gadgets can reduce student achievement	40%	60%	0%	0%
3	Wise use of gadgets can improve students' learning concentration.	47%	33%	13%	7%
4	The use of gadgets must be adjusted to the needs and learning goals of students	60%	33%	7%	0%
5	The use of gadgets must be adjusted to the needs and learning goals of students.	53%	33%	7%	7%
6	The use of gadgets must be supervised by parents and teachers	47%	47%	6%	0%
7	Gadget use should be balanced with physical and social activities	47%	53%	0%	0%
8	Gadget use should be rewarded with rewards and sanctions	27%	53%	13%	7%
9	Gadget use should be reflected with evaluation and introspection	53%	40%	7%	0%

10	Gadget use should be accompanied by education and motivation	67%	33%	0%	0%
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The table above is the result of teachers' responses to the relationship between the duration of gadget use and students' concentration ability. Statements with the highest response are number 1 and 10. In statement 1 regarding excessive gadget use can interfere with student learning concentration. Gadgets with various features captivate their own appeal to users. Gadgets offer a variety of entertainment, information, and communication that will distract students from lessons. Students who use gadgets frequently or excessively can experience addiction, laziness, lack of focus, and decreased enthusiasm for learning. This can be anticipated with a policy on gadget use. Students must be able to limit the time they use gadgets while learning and playing. Selection of useful and educational content will support students' learning achievement. Students must prioritize education and use gadgets as a means of support not a disruptor of lessons.

Table 4 Student responses to the relationship between the duration of gadget use and student concentration.

NO	Question	SS (%)	S (%)	TS (%)	STS (%)
1	Students like to use gadgets to study online, play games, and socialize with friends	40%	60%	0%	0%
2	Students feel bored and tired when studying at home	47%	40%	13%	0%
3	Students want to use gadgets wisely and usefully	47%	47%	6%	0%
4	Students need help and supervision from parents and teachers in using gadgets	60%	33%	7%	0%
5	Students want to balance the use of gadgets with physical and social activities	40%	60%	0%	0%
6	Students want to get education and motivation from parents and teachers about gadget use	47%	47%	6%	0%
7	Students want to get full support from teachers and parents in using gadgets	47%	40%	13%	0%
8	Students want to reflect on the use of gadgets with evaluation and introspection	53%	40%	7%	0%
9	Students want to use gadgets as creative and innovative media	60%	40%	0%	0%
10	Students want to use gadgets as an inspirational and aspirational media	60%	40%	0%	0%

The table above is the result of students' responses to the relationship between the duration of gadget use and students' concentration ability. The statements that have the highest response are items 9 and 10. These two statements do not have a rejection response to the statement. Item 9 explains that students want to use gadgets as creative and innovative media. The sophistication of this electronic device is no doubt. The features and applications that are presented and can be downloaded are able to lead users to become creative and innovative people in the use of digital technology. Gadgets if used according to their functions well can bring new changes to the world of education. Such as students becoming young content creators, musicians, designs, and even programming. In item 10 regarding students wanting to use gadgets as inspirational and aspirational media. Gadgets can be used to find and follow various examples of inspirational figures. This will encourage students to

learn and be rich. There are many forms of educational content, motivation, even tutorials and role models that can be used as a guide to progress. However, this must be done selectively so as not to receive the wrong information or content presented on gadgets.

In item 1 statements regarding students like to use gadgets to study online, play games, and socialise with friends. This has responded strongly agree 40% and 60% agree. In this day and age, the use of gadgets from various groups is unstoppable. The role of parents as the first educator at home who will provide direction and education to children. The use of gadgets for online learning will have a good effect on education. However, if the use of gadgets becomes a dependency in learning, this will cause children to have difficulty in solving problems without gadgets. The use of gadgets to play games will train children to solve various problems and there are also many educational games presented. However, if parents and children cannot choose the right games to play, as well as prolonged use, this will adversely affect the child's academics, health, and concentration. Children will even be difficult to manage and direct. In the world of social media, children will be able to socialise with their distant friends. The use of social media must be given rules and also basic education so that children are not careless in their use. Children must be taught to maintain their own security and privacy as well as their media accounts. In addition, the use of gadgets to socialise with friends also has a negative impact, where children do not want to leave the house to just play. Their time is only spent in front of the screen.

Table 5. Teachers' responses to the relationship between the duration of gadget use and students' concentration using oneway anova ui.

ANOVA		Sum	of			
		Squares	df	Mean Square	F	Sig.
X.1	Teacher	1.733	6	.289	1.300	.448
	Teacher	.667	3	.222		
	Total	2.400	9			
X.2	Teacher	2.400	6	.400	.	.
	Teacher	.000	3	.000		
	Total	2.400	9			
X.3	Teacher	10.233	6	1.706	7.675	.061
	Teacher	.667	3	.222		
	Total	10.900	9			
X.4	Teacher	3.733	6	.622	2.800	.214
	Teacher	.667	3	.222		
	Total	4.400	9			
X.5	Teacher	8.233	6	1.372	6.175	.082
	Teacher	.667	3	.222		
	Total	8.900	9			
X.6	Teacher	3.433	6	.572	2.575	.234
	Teacher	.667	3	.222		
	Total	4.100	9			
X.7	Teacher	2.400	6	.400	.	.
	Teacher	.000	3	.000		
	Total	2.400	9			

X.8	Teacher	4.233	6	.706	.794	.631
	Teacher	2.667	3	.889		
	Total	6.900	9			
X.9	Teacher	7.433	6	1.239	5.575	.093
	Teacher	.667	3	.222		
	Total	8.100	9			
X.10	Teacher	2.400	6	.400	.	.
	Teacher	.000	3	.000		
	Total	2.400	9			

The table above is a sample of teacher responses that have been tested for oneway anova. The total sum of squares is 10,900, df 9, mean square 1,706, F 7,675, and sig 0.061. This value is obtained from the statement that wise use of gadgets can improve students' learning concentration. There were some rejections from the respondents, but after looking back at everyday life this statement is supportive. This is because unwise use will disrupt student concentration. For example, students cannot use gadgets properly and correctly, use a duration that exceeds the limit, or watch something negative either intentionally or unintentionally. So it takes a wise way of using gadgets, so as not to interfere with daily activities and even the world of education and social.

Table 6: Students' responses to the relationship between the duration of gadget use and students' concentration using the oneway anova test.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
X.1	Students	3.100	6	.517	8.267	.004
	Students	.500	8	.063		
	Total	3.600	14			
X.2	Students	7.900	6	1.317	1.621	.258
	Students	6.500	8	.813		
	Total	14.400	14			
X.3	Students	5.600	6	.933	.	.
	Students	.000	8	.000		
	Total	5.600	14			
X.4	Students	3.733	6	.622	2.489	.116
	Students	2.000	8	.250		
	Total	5.733	14			
X.5	Students	3.600	6	.600	.	.
	Students	.000	8	.000		
	Total	3.600	14			
X.6	Students	4.600	6	.767	6.133	.011
	Students	1.000	8	.125		
	Total	5.600	14			
X.7	Students	6.833	6	1.139	18.222	.000
	Students	.500	8	.063		
	Total	7.333	14			

X.8	Students	5.733	6	.956	.	.
	Students	.000	8	.000		
	Total	5.733	14			
X.9	Students	3.100	6	.517	8.267	.004
	Students	.500	8	.063		
	Total	3.600	14			
X.10	Students	3.600	6	.600	.	.
	Students	.000	8	.000		
	Total	3.600	14			

The table above is a sample response from students that has been processed with the oneway anova test. Total sum of squares 5,600, df 14, mean squares 767, F 6,133, and sig 0.011. This statement has significance because the sig value is less than 0.050. The statement in item 6 regarding students want to get education and motivation from parents and teachers about gadget use. Education and motivation from teachers and parents on the use of gadgets will have a positive and negative impact on children's development. When given education, children will know the limits, benefits, and risks of using gadgets. So that students can use wisely, balanced and according to their needs. Parents and teachers will need to provide supervision, support to children in using gadgets. This is so that children are not addicted to gadgets and can maintain their mental and physical health.

The use of gadgets can affect the level of concentration ability of an individual. The longer students use gadgets, the less concentration they will have. This causes a decrease in the quality of student learning. Gadgets can distract students from their education, thus reducing their interest in learning independently. In addition, it will also reduce the social skills of students (Setiawati, 2019; Wahyuni, 2019). Students are more introverted and less sociable with their peers. On the other hand, it also increases the risk of gadget dependence due to addiction. This is caused by several factors such as visual, auditive, or cognitive distractions caused by gadgets. It will also result in lack of sleep or poor quality rest. All of these things will have an impact on the decline in the achievements of students in education and non-education. unwise use of gadgets can result in changes in mood and emotions in students (Balayeva, 2023). Students who are addicted to using gadgets will have unstable emotions. Therefore, proper guidance and support is needed in the use of gadgets.

Screen time that is not controlled by both students and parents and teachers will affect sleep patterns. This can result in health issues such as anaemia, anxiety, depression, and hallucinations (Ayu, 2020; Budiarto, 2022). There is often negative content on gadgets that sometimes accidentally passes through the homepage. If this attracts students, it will trigger mental health and could have a risk of suicide. Addiction to the social world will result in a lack of student interaction with friends in the real world. This will affect the level of socialisation in the real world, students will be engrossed in gadgets which results in reduced social interaction with friends, outgoing, and the environment. Decreased concentration will result in loss of motivation and learning achievement, students will neglect responsibilities and obligations thus damaging productivity.

Scheduling in time management needs to be done by students to set a special time to use gadgets during learning activities. Avoiding the use of gadgets at bedtime and also doing assignments to focus on learning (Krisnana, 2022). The use of gadgets at bedtime will damage sleep, making it difficult to rest. Parents and teachers as adults who will control student behaviour must supervise. Supervision here is in the form of gadget use in students, both the type, duration, and content accessed. Parents can also provide limits and sanctions in the use of gadgets to students. This is useful to train students to use gadgets wisely, utilise them correctly, be controlled, maintain safety, responsibility, and other

supporting aspects. Teachers and parents as motivators need to provide support and motivation to students who can manage the use of gadgets by going up. Parents and teachers also need to know the interests and talents of students so that they can provide input on what will be used and accessed on gadgets.

Selection of appropriate educational applications and platforms to suit the needs and learning styles of students. Students can seek feedback and recommendations from teachers and trusted sources to ensure the quality and relevance of gadgets. In addition, the use of gadgets as learning aids is not a tool of dependence in learning (Liza, 2023). Students can use gadgets to access learning applications, quizzes, find references, and improve their understanding and skills. The use of gadgets is individualised, where feedback from gadgets is individualised. Thus, a defence of balance between gadget use and social interaction is needed. This will help students allocate time to play outside, read, interact with friends, family, and the surrounding environment properly.

Addiction to gadgets is very bad for its users. This can be overcome by providing education on the healthy and appropriate use of gadgets. Students are expected to understand the time limit for gadget use and the importance of prioritising non-electronic activities. Teachers and parents should also be good examples for students. Teachers and parents should show a wise and responsible attitude in using gadgets, and not be too dependent on gadgets in daily life. Provide limits and supervision in the use of gadgets, such as 1-2 hours a day. Provide and do fun activities without involving gadgets. Do not give the gadget to the student completely, but train the student to ask permission first. So it takes a firm and consistent attitude from parents and teachers in carrying out the rules.

CONCLUSION

Gadgets are electronic devices that have sophisticated special features to help facilitate various things in the digital world. Starting from small children to the elderly have used gadgets today. Students really like to use gadgets for online learning, games, making video editors, and many more. However, this utilisation must have education and a wise way. Wise use of gadgets will lead to benefits that will support future careers. However, excessive and uncontrolled use of gadgets will greatly affect health, concentration, lifestyle, social, and even achievement. Gadgets with interesting features can grab students' attention. So that students' focus on learning will be distracted, students will also experience depression and also lose motivation in learning. There is a negative relationship between the duration of gadget use and students' concentration ability. The longer students use gadgets, the lower their concentration ability. Excessive use of gadgets can cause a decrease in the ability to focus on learning, reduce enthusiasm for learning, and cause student performance to decline.

The use of gadgets in everyday life must be properly controlled. In order not to have a negative impact on the user and even on the people around. The use of gadgets must adjust to the needs of students and learning. The use of gadgets must be balanced with physical and social activities. When gadget use is not accompanied by physical and social activities, this will have an impact on psychological disorders such as depression, anxiety, and self-isolation in students. Teachers and parents must provide education and motivation so that students have responsibility, skills, and safety in gadget use. So that the use of gadgets can be done healthily and productively in daily activities. Sanctioning every offence committed in gadget use must also be done, so that students have respect, discipline, and ethics in using gadgets wisely. Everything that is done must be evaluated and introspected to see the impacts caused and the right treatment. Evaluation and introspection will make students critical, creative, and reflective in using gadgets as a medium for learning and self-development.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

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