The Influence of Self-regulation and the Gadget Utilization Intensity as Learning Resources in the Era of IR 4.0 to Students' Learning Outcome

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Abstract: The purpose of this research was to know the influence of self-regulation and the gadget utilization intensity as learning resources in the era of IR 4.0 to studens' learning outcome of VI class SDN Uwungjaya Tangerang City School Year 2018/2019. The result of research showed that, there was influence of self-regulation and the gadget utilization intensity as learning resources to students' learning outcome. The conclusion of this research were: (1) there is influence of self-regulation to students' learning outcome; (2) there is influence of gadget utilization intensity as learning resources to students' learning outcome; (3) there is influence of self-regulation and gadget utilization intensity as learning resources in the era of IR 4.0 to students' learning outcome. The method that used in this research is ex post facto. Population of this research was the 6th grade students of SDN Uwungjaya with total 32 students. The data in this research are collected by using questionnaire, observation, and study documentary.

1   INTRODUCTION

Education in many countries are continue to experience development, no exception in Indonesia. As a developing country, Indonesia currently continue to try to do a variety of innovation education. Similarly with the other developing countries that are on the bottom of the rankings in the world. According to data from the Organisation for Economic Co-operation and Development (OECD) which is offered by The Guardian, Indonesia is at position 57 of 65 countries. It has certainly become an important note because it includes in low position. Indonesia should immediately do a lot in terms of improvements in the educational world, especially in the field of technology.

Education currently prefer the technology as a medium as well as learning resources, especially in the era of the industrial revolution as known as IR 4.0. Actually talking about the industrial revolution and also the world of education, not only in Indonesia that becomes the main point. In some of the developed world is indeed any need for special handling for example in tackling the development of increasingly sophisticated technology, because

otherwise it could be dammed, it will provide a dangerous impact.

The era of IR 4.0 gives a little too much influence in diverse sectors, and the one of the sector is education. It is characterized by the presence of the use of IT in learning, internet as a learning resources, etc. Learning with the use of IT is rated more effective and efficient, for example, the current e-learning has emerged which began to be applied in a variety of schools as well as educational establishments that already emphasis on learning by utilizing the technology. Many schools are now using a variety of facilities such as computers as a medium of instruction, not even a school also rarely requires that every student has a laptop or a smartphone like gadget as source or media study at any time required by the time the hour lesson.

The use of laptops, computer, smartphones, or the other like which are comprehensive features as a source of learning is very important indeed owned by each student. But not infrequently also often encountered at this time there are many gadget abuse by students. Because there are so many feature of gadget that can be used to the other thing, for example the function of entertainment, and often it makes many individuals are less able to control

themselves in the use of the wise. No exception in children especially children aged elementary and junior high school which still require a lot of supervision.

Children at the age of basic education or primary school in Indonesia are now given much freedom in the use of gadget. Because parents think children at primary school age range is already have a smartphone and they are have a freedom to do everything with their gadget or smartphone. Especially in some major cities that has a fairly high level of busyness for its parent, any time it needs to communicate with their children for example just to pick up on schools or private. Actually, trying to trust with our children to the use of gadgets is not wrong, but things to look out for is how the parents should give a guidance and direction so that the child is able to control himself or herself.

Development of children in an era of IR 4.0 is the transition of the millennial generation, which is more than most understand about gadgets and how to use it. On the Global Educational and Solution Exhibition and Conference Indonesia (GESS) held in Jakarta on September 26-28, 2018 one of the interviewees said that the role of the millennial generation children in an era of industrial revolution was very important considering the generation has a very easy access to do a variety of things with the utilization of technology. But if not controlled properly, it will negatively affect e.g. the instantaneous habits of doing things without effort.

The existence of technology that is very close to humans ever made all sorts of things that are easily accessed by various circles cannot be dammed. Thus one of the ways that still allow is to control yourself in order to be able to choose from a variety of things that are positive and negative. This is related to why the self-regulation as part of the learning theory developed by Bandura have roles that are quite important.

Basically if a child has a good self-regulation i.e. how children are able to organize themselves and discipline in doing a variety of things it will be easy to control him in using a gadget that is good and right, for example, they can reduce the intensity of playing with gadgets for things that are not useful.

1.1 Self-Regulation

Development of IR 4.0 era highlights important today especially in the development of technology in the millennial generation. It is inseparable from the role of children as the next generation. The existence of technology, people are able to easily do many

things but the technology also can be dangerous if not in regulation as well.

As the generation that currently exists on the IR 4.0, children still require a lot of guidance, for example in the use of gadgets if it is used for things that are useful for example as a source of learning. However, if the children uncontrolled playing their gadget it can make they have an asocial character. The other negative impact of gadget are children can easily imitate what their saw, especially for they are in the concrete-operational as a period of the age. This corresponds to the view that the behaviour of the Bandura that a behaviour is performed by the individual basically brought about results from the interaction of environment and i.e cognitive schemas that are owned by the individual themselves (Suyono, 2013).

Self-regulation as the voluntary control of emotional, attentional, and behavioural impulses in the service personally valued goals and standards (Sokol, 2013). Self-regulated behaviour also means that when someone is able to organize herself then that person as an individual capable of controlling his behavior in various circumstances (Hergenhahn & Olson, 2017), for example when a person is in the environment is less good then with self-regulation is capable of regulating itself in how should behave. Self-regulation is a core aspect of adaptive human behaviour that has been studied, largely in parallel, through the lenses of social and personality psychology as well as cognitive psychology (Hoffman, Schmeichel, & Baddeley, 2012).

According to Bandura (1988), if an act merely specified because of rewards and punishment as well, then everyone would have a behaviour that varies in accordance with the conditions encountered. For it is necessary the presence of settings from within him that is able to plan a course of action as a form of planning in the future and has value. It can also be seen from how someone cognitively motivated himself so able to anticipate the possibility of some of the actions which he gives a positive impact.

1.2 Gadget Utilization Intensity as Learning Resources

The development of a more advanced era makes a lot of things a modern multi-purpose is no exception in the field of education. Meet the era of IR 4.0 then it is certain there are many developmental progress in the field of education, for example, only the more advanced learning in media as well as learning resources used. Even in the few schools Indonesia

now have started many have a computer laboratory for the means of teaching and learning at schools.

The gadget is basically a diverse range of technology tools that make it easy for humans to do a variety of activities. Some examples of gadgets is smartphone, computer, headset, laptop, notebooks, etc.

Gadget currently serves as entertainment can be used as tools to play facilities for example, watching television, communicate with social media, play games, and still many others. With the many functions it then doesn't close possibility if a lot of people and also the children who love to play using a gadget.

The use of the good and true gadget can provide benefits. But if not controlled well it will be very dangerous for children, because have a negative impact. Because basically the kids became one of the main highlights and it's important to note all kinds of actions. According to Masterson (2007) suggests that children are the most polluted due to the less-educated TV impressions for example, vulnerable to violent action and examples of television. Masterson (2007) also asserts in his book according to psychologists if children play computer games that feature scenes of violence are far more dangerous than watching television.

Although gadgets can be dangerous, but if used properly there are many gadget also benefits if used in accordance with needs for example, currently all kinds of information easily accessible so that the learning resources can easily be searched over the internet. If the gadgets can be put to good use especially in the world of learning, then the children will easily find a wide array of learning resources of the gadgets they have.

1.3 Learning Outcome

The results of the study are changes that happen to the students include three domains i.e., cognitive, psychomotor, and affective as well (Susanto, 2013). A study done by the teacher then should have to be able to touch the realm so that the third learning objectives can be achieved. For it is need for variation in learning so the goals of study can be reach.

One of the ways that can be done is a teacher can enable students to seek diverse range of learning resources, currently the most close and allow is to use the internet i.e. the use of gadgets.

The existence of the development of an increasingly sophisticated era when it has become the choice for using IR 4.0 era learning resource

with the utilization of existing technologies, with the learning resources that are increasingly sophisticated and versatile easy-to-get, then should be the result of learning achieved ever getting better anyway. However it should be noted that indeed the use of gadgets is not completely correct and well used by each individual.

2 METHOD

The methods used in this research is the ex post facto. Ex post facto is a research study to identify the various existing incident and reviewing of various factors that cause these events. This study used a survey approach. According to Sugiyono (2010) approach of the survey carried out for dancing a variety of data scientifically by way of observation, interview and questionnaire.

Observation and interviews required to figure out the initial conditions, then the questionnaire needed to further analyze the data. Questionnaire is a technique of taking the data by giving a set of questions to be answered, for the respondent through the questionnaire then data collection techniques can be more efficient (Sugiyono, 2015). The questionnaire used in the study previously conducted tests of validity in advance so that it can be said to be viable. Questionnaire for several rounds of questions from self-regulation consists of 30 questions, not valid as many as 8 so that the remaining 22 questions. For a detailed questionnaire intensity utilization gadget as a learning resource of 25 questions, which is valid for only 15 questions.

Review of the approach and steps in the study then then be classified descriptive and verification research. Such research is used to find out the circumstances that then depicted through various data from either the object or the subject of the research, in addition verification done to know the degree of the influence of variables on population data.

Before doing the research and data retrieval in the SDN Uwungjaya Tangerang, researchers first conducted a survey to find out how many students have a personal gadget. The result of the entire class VI students i.e. almost around 80% already have a personal grant of gadget from his parents. Thus SDN Uwungjaya be the right choice to do a study.

Researchers are also finding out the condition of the school by conducting interviews and observations related places of research. The result is a requirement for some research shows that SDN Uwungjaya suitable for research based on several

criteria including: fulfilling the target population i.e. personal gadgets that have amounted to 80% and from the results of the interview they was very happy using their gadget as a source of learning, will be holding a computer laboratory, and also there is wifi as the school facilities. Samples taken in this study is the whole grade VIC as many as 32 students.

The population of this research is the grade VIC SDN Uwungjaya city of Tangerang on Jl. Dipati Ukur, Uwung Jaya, Cibodas, Kota Tangerang, Banten 15138. This research was 2018/2019 with the number of students as many as 32 students. Data collection on these studies using observational techniques, interviews and question form. Hypothesis testing is done using simple linear regression and multiple linear regression.

2 RESULT AND DISCUSSION

Simple linear regression data testing using the underway to find out whether or not there is a self-regulatory influences and the intensity of use of the gadget as a learning resource in the IR learning outcomes against the 4.0 grade VIC SDN Uwungjaya Tangerang city year lesson 2018/2019. For subsequent hypothesis i.e. third hypothesis using a linear multiple regression.

2.1 First Hypothesis

Based on the regression coefficient for the calculation of the hypothesis, first obtained by the equation $Y = -9.002 + 1.076 X_1$. It can be spelled out as follows:
1. a constant value of -9.002 can say if there is no score of self-regulation ($X = 0$) then the average of the score results of the study of -9.002.
2. Obtained coefficient regression to X of 1.076 then it is equal to an increase in the results of a study of 1.076.

In addition the calculation of $t_{calculate}$ for self-regulation i.e. of $5.463 > t_{table}$ (2.042). Probability value (sig) of $0.000 < 0.005$. It means the H_1 is accepted and H_0 is rejected. Thus it can be said self-regulation effect significantly to the results of the study. The relationship of self-regulation against the learning outcomes including high enough on the category of 0.076 with levels of determination or R^2 of 0.499. In other words, the influence of self-regulation against the learning outcomes of 49.9%. While amounting to 50.1% is affected by other factors.

2.2 The Influence Self-Regulation (X_1) to Students' Learning Outcome (Y)

In accordance with the acquisition of the data i.e. R^2 of 0,499 or otherwise influence self-regulation against the learning outcomes of 49.9% then it is proven the existence of significant influence.

Based on previous research ever undertaken by Schunk & Zimmerman (2012) shows that self-regulation giving effect on the achievement of learning i.e. in cognitions, emotions, and behaviours. In addition to other research done by Nur & Latief (2016) shows that self-regulation also exert influence on the outcome of learning math students amounted to 52.9%.

The difference with previous research, this study is viewable from the independent variables that influence, that of research conducted by Nur and Latief focus more on self-regulation against the results of learning Math students while This study is associated with the other independent variables also affect student learning outcomes.

2.3 Second Hypothesis

A regression equation to the second hypothesis gained $Y = 33.378 + 0.978 X_2$. Can be outlined as follows:
1. a constant value of 33.378 can say if there is no score of self-regulation ($X = 0$) then the average of the score results of the study of 33.378.
2. Obtained coefficient regression to X of 0.978 it equal to an increase in the results of a study of 0.978.

The calculation of $t_{calculate}$ for the intensity of use of the gadget as a learning resource that is of $3.387 > t_{table}$ (2.042). Probability value (sig) of $0.002 < 0.005$. H_0 is rejected and thus H_1 is accepted, it can be said the intensity of the use of learning resources as influential gadget significantly to the results of the study. The relationship of the intensity of use of the gadget as a source of learning against the results of the study included a fairly high on the category of 0.526 with levels of determination or R^2 of 0.277. In other words, the influence of the intensity of use of the gadget as a source of study results study of 27.7%. While amounted to 72.3% are influenced by other factors.

2.4 The Influence of Gadget Utilization Intensity as Learning Resources in The Era of IR 4.0 (X_2) to Students' Learning Outcome (Y)

The calculation of the level of determination (R^2) of the intensity of use of learning outcomes against gadget shows the number 0.277 or 27.7% effect on the results of the study.

Studies with similar variables never done before by Early (2018) indicate that the use of the gadget i.e. especially smartphone along with the motivation of learning can provide significant effects against results student learning. Same is the case with research conducted by Rozalia (2017) States that the intensity of utilization gadget can affect student learning achievements i.e. amounted to 67%. There is a difference with this study i.e. can be seen not only from the dependent variable which is measured in previous research to know the accomplishments of student learning, the use of any kind of research methods and the different research before using the quantitative approach with the design of the correlational while in this study using ex post facto.

2.5 Third Hypothesis

After doing multiple regression analysis using SPSS, then retrieved the data as indicated in the following table:

Table1: Results of Multiple Regression Analysis with SPSS.

Variable	B	t	Sig.
Self-regulation (X_1)	1.018	6.779	0.000
Gadget utilization intensity as learning resources (X_2)	0.878	4.790	0.000

Based on the table then the coefficient obtained by regression equation $Y = -39.914 + 1.018 X_1 + 0.878 X_2$. Thus can be outlined as follows:
1. a constant value of -39.914 can say if there is no score of self-regulation ($X = 0$) then the average of the results of learning score -39.914.
2. The value of the coefficient of regression (b_1) for the X_1 was 1.018. In other words, any addition of unit X variable self-regulation will improve learning outcomes of 1.018.

The value of the coefficient of regression (b_2) to X_2 was 0.878. In other words, any addition of unit X variable intensity utilization gadget as IR 4.0 era learning resources will improve the learning results of 0.878.

Table2. The Regression Coefficient of The Significance of Test Results Of Multiple

Regre ssion	R	R^2	F	Sig.	Conclu sion
X_1 X_2Y	0.849	0.720	37.310	0.00	Significant influence

According to the table shown, then the results of calculation of linear coefficient of double significance test (test F) obtained the value $F_{calculate} > F_{table}$, i.e. of 37.310 > 3.32. It means self-regulation and the intensity of use of the gadget as an influential learning resources together against the results of the study. The result of the calculation values for the coefficient of determination (R^2) of 0.720. Thus self-regulation and the intensity of use of gadget as learning resources provide the influence of 72%, and the rest by 28% is affected by other variables.

4 CONCLUSIONS

Based on the analysis of the data and also interpretation, then from this research it can be concluded a few things as follows: (1) Self-regulation effect on student learning outcomes with the relation coefficient of 0.706. Percentage of self-regulation against student learning outcomes of 49.9%; (2) the intensity of use of the gadget as a learning resource in the era of IR 4.0 retrieved results correlation value of 0.526 with percentage contributions influence of 27.7%; (3) the value of determination (R^2) of other words 0.720 influence given by the self-regulation and the intensity of use of the gadget as a learning resource in the era of IR 4.0 of 72%.

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