THE EFFECT OF ANDROID PHONE TO SCIENTIFIC KNOWLEDGE OF TEENAGERS (A CASE STUDY OF HIGH SCHOOL STUDENTS OF SMA 1 KABANDUNGAN)

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Abstract— Today, the development of technology rapidly struck Indonesia includes mobile technology. Based on data from the Ministry of Communications and Information Technology (2013) mobile phone users in Indonesia reached 270 million. The uses of mobile phones provide a great influence for life, especially students in Indonesia, both positive and negative impacts. The negative impact is the high dependence on the use of mobile phone. The positive impact is the effect on the improvement of the scientific knowledge of students. It will change the behavior and mindset of the students indirectly, especially in learning at school. This research is to determine how much the influence the use of scientific knowledge android phone to teenagers of high school students of SMA Negeri 1 Kabandungan. The method is performed in the form of direct observation to SMA Negeri 1 Kabandungan by distributing a questionnaire to all students of SMA Negeri 1 Kabandungan. The results showed that 95.5% and 86.4% good influence in a row on users and respondents who had used the phone android. The level of use for users and which have ever used successively that is sms and telephone 22.0%, google translate 16.7%, social media 23.8% and 21.6%, video 4.8% and 2.3 %, and games 13.7% and 13.6%, browsing 15.0% and 15.9%, other 4% and 2.8%. This research also shows that most of respondents 51.2% and 48.8% are users and the users claimed that the use of mobile phones using android is increasing their scientific knowledge.

Keywords— Android Phone, Scientific Knowledge, Students.

I. INTRODUCTION

In the globalization era, a technological advance in the world is very rapid, not least Indonesian. One of them such technological is increasingly mobile phones that we often call by phone. Many people are willing to spend the cost from hundreds up to millions of dollars in order to enjoy the sophistication of Android phones currently; the price of course depends on the type of application or feature offered.
Student is a generation of people that must be learned to improve scientific knowledge and acquire learning in accordance with the allocation. They realized that to help fulfill these obligations. Currently, almost every student has a hand phone in the pocket of his uniform. Of course this is because they do not want to say students are outdated. However, they don't know that not only the positive effect of the mobile phone as a form of technological advances can also give negative effects for their scientific knowledge.
The advantages of the sophistication of android mobile phone is beside to be able to send short messages and calls, listen to music, watch videos, listen to radio, internet and the main advantage is download a variety of applications that we want as whatsapp, blackberry messenger (BBM), twitter; line and others. However, a variety of applications that can affect the scientific knowledge of students, not only the students of SMA Negeri 1 Kabandungan are also using android phone. Therefore, researcher conducts this research on the effect of android phone to scientific knowledge of teenagers of SMA Negeri 1 Kabandungan. This research is to find out the effect of using android phone to scientific knowledge of teenagers of SMA Negeri 1 Kabandungan.

II. REVIEW OF RELATED LITERATURE

2.1 Definition Hand phone

According to Indonesian Dictionary (2003), mobile phone or cell phone is phones that use a self-contained battery, cordless and receive voice through the signal, to carry on a conversation between two people that distant place.
The technology is *Global System Mobile communication* (GSM) and Code *Division Multiple Access* (CDMA). In principle, the difference between these are how to use the code and transmitting frequencies used (Ryan et al. 2007).

2.2 Definition Smartphone Android

Smartphone is one of the sophisticated electronics at this time. Because, the new Smartphone grow into more sophisticated than previous Smartphone. Similarly many Smartphone brands are coming out with different features and specifications. This electronic device often used by people in an office, students, and children were now using a Smartphone but they still do not understand how to use the Smartphone correctly that they know just use it to play games. For the office of this stuff is very useful for them because they are very busy, These items facilitate them to manage all affairs office, whereas for students they are using this stuff as a medium of socialization with other people, for example; Twitter, Face book, WhatsApp, BBM and others.

2.3 Scientific knowledge

Knowledge is the result of the idea for the creation of one's actions which include the ability of cognitive, affective and psychomotor. Knowledge is seen from a person's cognitive abilities include the ability to know, understand, apply, analyze, synthesis and evaluate (Notoatmodjo, 2007).

According to Indonesian Dictionary (2003), knowledge is something that is known to be associated with the learning process.

In terms of content, the science can be defined as the knowledge that is integrated or set of knowledge that is interrelated and tied in a single truth. While in terms of process, knowledge can be defined as activities aimed at finding natural variables that are important and then explain and predict the relationship (Serdamayanti, 2002).

Based on this definition, it can be concluded that the scientific knowledge is the clusters of knowledge which is based on the scientific method.

III. RESEARCH METHOD

3.1 Time and Place Research

This research was conducted in February 2015 in SMA Negeri 1 Kabandungan, District Kabandungan, Sukabumi, and West Java, Indonesia.

3.2 Population and Sample

The population used in this research was 262 students consisting of students who have android phone and ever used. The sample used in this research was 132 students from the various classrooms.

3.3 Method

The method is performed in the form of questionnaires to all students SMA Negeri 1 Kabandungan. End 262 students have android and never used. This amount consists of 160 students who still have or use android phone and 162 students who had used the android phone. The sampling method using is the Slovin formula with $n = \frac{1}{2} N + 1$ the selected first in proportion to the number of each respondent who still use and which never used as many as 66 students.

IV. RESULTS AND DISCUSSION

4.1 SMA Negeri 1 Kabandungan Profile

High School (SMA) 1 Kabandungan is the only high school in the village of Tugu Bandung Jl. Tirtaatmaja Km 1 Kabandungan Subdistrict, Sukabumi which was established in 2007. SMAN 1 Kabandungan this year has 426 students which 40% are male and 60 % female. The teachers who teach in these schools are 25 people 10 of them have become civil servants (PNS). The study time is every day during 3 hours to 6 hours 45 minutes which consists of 12 classes. Given the location is quite far from the city center, most of the parents' background working as a farmer who is a major source of income to pay for school. Even though SMAN 1 Kabandungan far from the city center, the facilities available for teaching and learning process is complete, that is 13 classrooms, offices, libraries, laboratories, biology laboratories, chemistry laboratories, and prayer.

4.2 The level of the respondent, the price of usage and usage time Android phone

Based on research conducted on students of SMA Negeri 1 Kabandungan, android phone influence on the knowledge students can be known. The research begins with a random sampling, which gave questionnaires to 132 students of SMA Negeri 1 Kabandungan. The total number of students is 426 students of various classes, such as classes 10 IPA 1, 10 IPA 2, 10 IPS 1, 10 IPS 2, 11 IPA 1, 11 IPA 2, 11 IPS 1, 11 IPS 2, 12 IPA 1, 12 IPA 2, 12 IPS 1, and 12 IPS 2. The number of students from each class was studied in a row as 9, 15, 11, 8, 18, 12, 11, 14, 13, 10, 6, and 5 students. The number of respondents, android prices used and the time of use of mobile phones can be seen in Table android follows.

Table 1. distribution of the respondents, the level of use of the price, and the usage of time of android phone.

Variabel		number of respondens use	percent of *NR	Number of Ever Respondens Use	Percent of *NER
Gender	Male	28	42.4%	25	37.9%
	Female	38	57.6%	41	62.1%
		66	**100%**	**66**	**100%**
Price of HP	≤ 500,000	6	9.1%		
	500,000<Rp ≤1,000,000	29	43.9%		
	1,000,000<R p ≤2,000,000	23	34.8%		
	2,000,000<Rp ≤3,500,000	5	7.6%		
	Rp > 3,500,000	3	4.5%		
	Total	**66**	**100%**		
Time of use HP	≤ 1 hour	2	3.0%	48	72.7%
	1 < hours ≤ 3	14	21.2%	9	13.6%
	3 < hours ≤ 6	16	24.2%	6	9.1%
	6 < hours ≤ 9	16	24.2%	1	1.5%
	9 < hours ≤ 12	9	13.6%	2	3.0%
	12 < hours ≤ 15	7	10.6%	0	0.0%
	15 < hours ≤ 18	2	3.0%	0	0.0%
	> 18 hours	0	0.0%	0	0.0%
	Total	**66**	**100%**	**66**	**100%**

Table 1 shows the price of Android used by the respondents varied between a price below Rp.500,000.00,- up to Rp.3,500,000.00,- the price of the most used android between price Rp.500,00.00,- up to Rp.1,000,000.00,- the level of use of 43.9% and few respondents who use android at a price above Rp.3,500,000.00,- that is 4.5%. According to, the results of Markplus Insight Netizen Survey (2012) mentions that the number of Internet users in Indonesia has reached 61 million people in 2012. That number makes the percentage of Internet users compared to the total population is 23.5%. Based on the result above, 40% of them access the Internet more than 3 hours a day. The number of internet users who use mobile devices such as mobile phones and tablets reach 58 million people. Based on the results of the research, 24.2% of android users spend 4-6 and 7-9 hours in the day As for the respondents who had used the android phone, 72.7% using android more or less equal to one hour. This indicates that the android phone has become widespread in SMA Negeri 1 kabandungan because android has affordable price.

4.3. The effect of android phone to scientific knowledge

The respondents in the research are divided into two categories: the users of android and the users ever use android. In comparison, the users respondent know better to the circumstances of android technology they use by a margin of 4.8% more than the respondents who had used.. So that, it affects to the influence of the scientific knowledge of students on the use of android phone is 51.2% while, the students who had used the influence is 47.6% of the accumulated amount of users and has used at 100%. Students who use android turned out to be 54.0% frequently use android phone to search for information about subjects. While, the students who had used android only 46.0% Students who have used android 54.5% use of a friend, and 45.5% of family. Next, the android table influence on the students' knowledge both users and the ever use.

Tabel 2. Table 2. The level of effect of using android on the scientific knowledge of students.

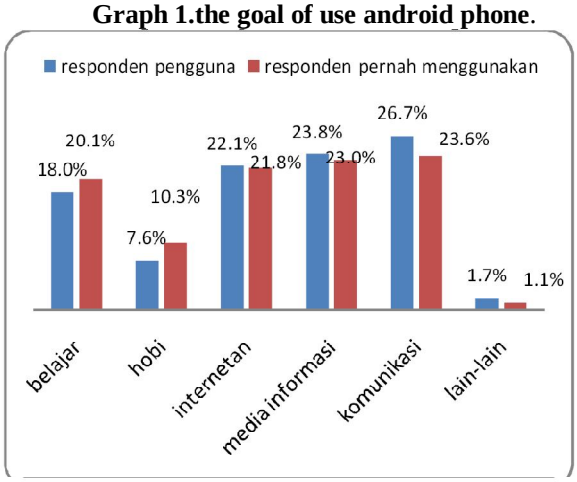
No.	Category	Technology knowledge	Knowledge increasing	*Subject Searching*	Influence		Using source	
					good	bad	family	friends
1	Android phone user	52.40 %	51.2%	54.0 %	95.5%	4.5 %		
2	The user who had ever used android	47.60 %	48.8%	46.0 %	86.4%	13.6%	45.5%	54.5%
	Total	**100 %**	**100%**	**100%**				

Table 2 shows the degree of influence of the android to the scientific knowledge of students. Based on the research results, 95.5% of android user effects is good to the students knowledge and only 4.5% said that the android effect is not good for the students. In other hand for the users who ever using android 86.4% give good effect and 13.6% give bad effect to the students.

4.4. The level of Android mobile phone rate

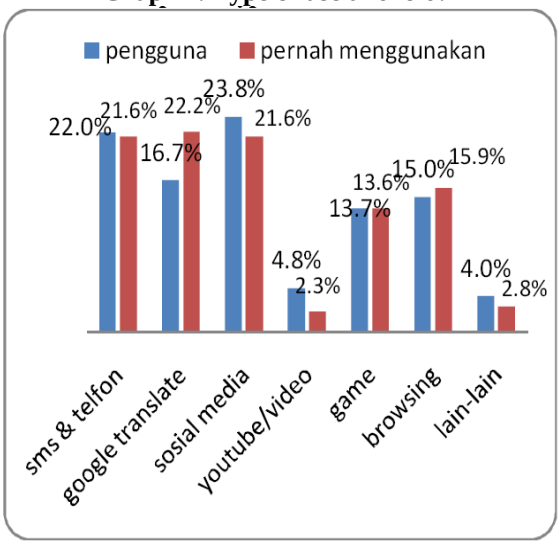
Based on the research, the main purpose of users and the users who ever used the android is for communication percentages 26.7% and 23.6%. This is consistent with the objective of android for communication. Below, the graph shows the percentage of the goal having android phone.

Graph 1.the goal of use android phone.



Graph 1 shows the student's choice in goal having android phone sequentially from the most priority is to facilitate communication, as a medium of information, browsing, learning, hobbies, etc. While the results of the research on the type of the use, it can be seen in the following chart.

Graph 2. Type of use android.

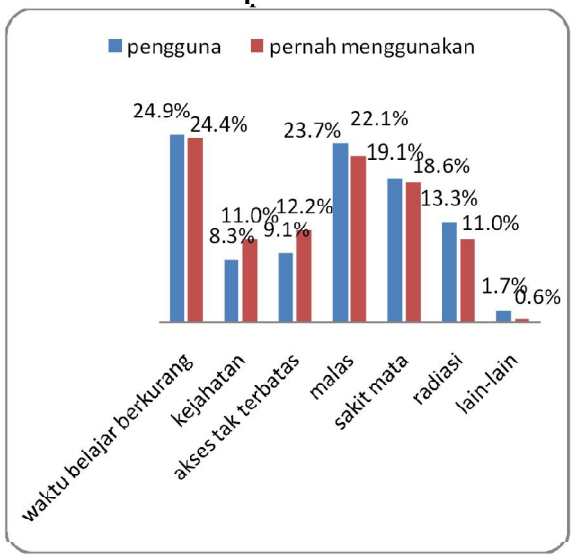


Graph 2 shows the types of use android phone to android users and those who ever used. The results showed 22.0% and 23.8% of the users use Android in a row for SMS, telephone and social media such as facebook, twitter, line and others. While those who ever used 22.2% and 21.6% respectively using Google translate for telephone, SMS and social media. This difference shows to the students ever use android either borrows from friends or family use it for a foreign language translation.

4.5. The impact Use of android

Using a technology that can be used easily and easy to carry anywhere, android phone also has risks that impact the android users. The impacts that can be felt on the students of SMAN 1 Kabandungan, affecting to their time of study, lazy, eye pain, radiation, unlimited internet access especially to students, crime and other. Here is a graph of the level of impact that was felt by the students of SMAN 1 Kabandungan

Graph 3. The level of impact of the using android phone.



Based on the results of the research, 24.9% and 24.4% for students who use android answered that the most impact of the using android is reduces the study time and felt lazy. Whereas to the students who had ever used, felt the same impact. Reduces the study time and make their lazy is the main impact, but the percentages are 23.7% and 22.1%.

CONCLUSIONS

Based on the results of the research, the students of SMAN 1 Kabandungan, it can be concluded that 95.5% and 86.4% good influence on students who use and who had ever used the benefits of android phone. In addition, for information improve the knowledge 23.8%. Utilizing the android phone as a means to expand their scientific knowledge can be obtained quickly and accurately from various reliable sources and always up to date.

SUGGESTION

The using of Android mobile phone should be to the positive things, for example, searching knowledge that can improve students' scientific knowledge The parents or teachers should always pay attention and control every activity of their children or students in SMA Negeri 1 Kabandungan And the facilities that have been provided in a mobile phone it should be used as best as possible and as appropriate by a student who should prioritize learning.

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