

ANALYSIS ON SMARTPHONES USAGE AS LEARNING RESOURCES IN CLASSES

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Abstract : The majority of middle school students have smartphones to search for information in globalization that we cannot avoid. But the phenomenon shows: (1) they use smartphones only for social communication, and search for less important information, (2) the majority of schools forbid students bring smartphones to school. If this continues, it will hinder the acceleration of students' knowledge development. This study aims to explore the benefits of smartphones for OSN (National Science Olympiad) coaching participants who are taught to use smartphones as learning resources. Data was collected using a questionnaire distributed through WhatsApp. Furthermore, the data were analyzed descriptively. The results of study found: (a) 70.1% of respondents in using smartphones to prepare OSN increased in the high category, (b) of the 6 indicators studied all increased in the high category, (c) 5.6% of respondents felt the benefits were low because they experienced difficulties in individual and group learning patterns. Furthermore, schools are advised to use smartphones as a learning resource in schools, but their use is under the control (command and supervision) of teachers.

Keywords: Smartphone usage, learning source, in class

INTRODUCTION

The minister of research and technology of higher education at the national work meeting in Medan, stated that in the 21st century there was an industrial revolution 4.0 characterized by: (a) Robotic automation, in this case human work was taken over by robots, because it was considered more effective and efficient; (b) 3D Printer, in this case the printer can print with results in 3D; (c) Internet of things, that is, everything in life is connected to the internet (Bernas, 2018). Whereas Pierre, et al (2017) stated Industry 4.0 refers to the use of digital technologies to make manufacturing more agile, flexible and responsive to customers".

The information above shows one characteristic of industrial revolution 4.0 is the existence of the internet as information technology from various human activities. In this case the internet helps humans in various activities, such as: communicating and searching for various information through smartphones, and other gadgets. Smartphones are phones that have the capability of a computer, usually having large screens and operating systems capable of running common applications (Oxford Online, 2013).



According to Djatmiko Wardoyo as Marcomm Director Era Jaya, Smartphone users in Indonesia are always increasing. In 2008 the number of smartphone users in Indonesia was only 2%, in 2009 it was 5%, in 2010 it was 13%, in 2011 it reached 17%, and in 2012 the number was 28%. In this case e-Marketer estimates smartphone users in Indonesia will continue to grow, and in 2019, it is estimated to reach 92 million people (Jose, 2015).

Smartphones with the help of the internet can be used to communicate, and can be a source of various scientific information without limit of space and time, both positive and negative information. This is as stated Barakati (2013) "they are portability, collaborate supporting, motivation and according to students' perception *smartphone* can increase their ability in learning English". However, Backer (2010) stated that there was a negative impact, students said smartphones could be a tool for cheating, and that tends to make students do many things instantly and can be addicted.

The phenomenon in secondary schools in the city of Pekanbaru shows: (a) almost all students in secondary schools have Smartphones, (b) the majority of schools prohibit students from bringing smartphones to school, and (c) the majority of students use smartphones only for social media facilities and seek information that not too important. Schools do the prohibition because they are worried that their students will use smartphones for something negative so that it will disrupt the learning process and results. This is very reasonable, because according to Muntaha (2017) smartphones have several negative impacts, including: (a) making students choose games and play regardless of their learning obligations, (b) Smartphones can waste time in vain because they forget the time for their learning obligations, (c) Smartphones that easily access the internet, are often used by students to access pornographic sites.

In the current information globalization, everything mentioned above is difficult to avoid. Therefore, if the ban continues, it will hinder the acceleration of the development of students' knowledge in winning global competition. Therefore, schools must make directives and guidance to their students to use smartphones constructively, such as learning resources both at school and at home. This is as stated by Muntaha (2017) that the gadget in learning has the following benefits:

- 1. Students can ask teachers through social media.
- 2. The teacher can provide consultation to students about the lesson.
- 3. Students are helped by easy information on the internet.
- 4. Teachers can save time when learning activities take place.
- 5. The gadget is very interactive.

In this case, Brusco (2010) explained that smartphones are mobile phones that have various functions such as computerized systems, emailing, internet access and have various applications for information seeking such as health, sports, money and various topics. Smartphones can be used as a source of various scientific information. This is as stated by Rosell-Aguilar (2014) that using a smartphone application helps students being able to learn anytime, anywhere and at any speed with a variety of teaching styles, from repetitive training to easy all-in-one solutions.





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According to Putra (2017) "Gadgets can be a capital for teachers in developing their teaching creativity. The right teaching pattern for students in this digital era is to invite them to learn in their world, namely the digital world. For this reason, gadgets are easy to use in learning. Teachers should not run away from the world of students who are filled with technology if they want to be heard and cared for. Teachers enter the world of students so they can accompany them to use gadgets wisely. " Therefore, it requires awareness and accuracy of its users (students and teachers) so that smartphones can be used correctly. In this regard, this study aims to explore the benefits and patterns of smartphone use by OSN IPS coaching participants who are taught to use smartphones as a source of learning in the classroom.

METHODOLOGY

This research was conducted at students participating in Social Sciences OSN coaching in 2018 in Pekanbaru City and Siak Regency. The study was conducted on a sample of 24 students participating in social science OSN coaching in Pekanbaru and Siak District

The variable of this research is the benefits of smartphones as a source of learning in the classroom. The benefits of smartphones are intended as a smartphone benefit for students of Social Sciences OSN participants in Pekanbaru City and Siak Regency which are measured by improvement: learning motivation, interest in finding learning resources, patterns of finding learning resources, individual learning patterns, group learning patterns, and reducing smartphone use to social media.

In this study, data was collected using questionnaires distributed through whatshape to respondents (students of Social Sciences OSN participants in Pekanbaru City and Siak District in 2018). Then the respondent will answer the questions from the questionnaire through WhatsApp each respondent. Furthermore, the collected data will be entered into data entry and then analyzed descriptively using tables and graph.

RESULT AND DISCUSSION

The results of the study found that 70.1% of respondents felt the use of smartphones as a source of learning in the classroom had high benefits to prepare for the National Science Olympiad (OSN). Although some feel the usefulness of smartphones as a learning resource in the class in the low category, but the numbers are very small (i.e. 0%). While the remaining 24.3% felt the use of smartphones as a source of learning in the classroom had benefits in the medium category. In summary these results are as shown in figure 1 below.

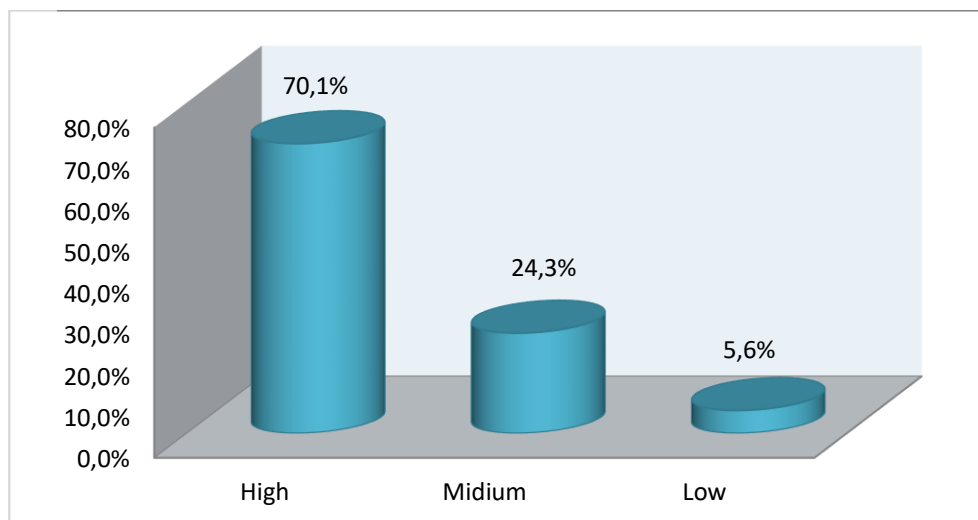


Figure 1. Benefits of Using Smartphones in the class as Learning Resources

This result is in line with the results of Firman's research (2016) that students often use their smartphones to exchange information such as sharing subject matter, asking about school schedules and activities through social media. Likewise, the results of Aribowo's research which found the use of smartphones in relation to mobile learning, can be used for academic purposes as a supporter of classroom learning (Aribowo, 2015).

The results of the study in Figure 1 are measured from 6 indicators, namely: (1) increasing learning motivation, (2) increasing interest in finding learning resources, (3) increasing patterns of learning resources, (4) increasing individual learning patterns, (5) increasing patterns group learning, (6) reducing smartphone use for social media. The results of the six indicators are as follows.

Table 1. Smartphone usage Increases of Learning Motivation

Category	Frequency	%	Cumulative%
High	18	75.0%	75.0%
Middle	5	20.8%	95.8%
Low	1	4.2%	100.0%
Total	24	100%	

Table 1 shows that the majority (75%) of respondents (students participating in OSN) in Pekanbaru Regency and Pekanbaru City felt that the use of smartphones in the classroom would increase their motivation in economic learning in the high category. Although there is an increase in the low category, the number is very small at 4.2%. Ini senada dengan hasil penelitian Intan, dkk yang menemukan pada kenyataannya mahasiswa di Politeknik Samratulangi lebih cenderung menggunakan smartphone untuk



menunjang aktivitas perkuliahannya dalam hal mencari berbagai macam informasi yang berkaitan dengan ilmu yang mereka pelajari (Intan, dkk., 2017).

Table 2. Smartphones Usage Increases of Interest in Finding Learning Resources

Category	Frequency	%	Cumulative%
High	20	83.3%	83.3%
Middle	4	16.7%	100.0%
Low	0	0.0%	100.0%
Total	24	100%	

Table 2 shows that the majority of respondents (OSN coaching students) in Siak Regency and Pekanbaru City (83.3%) felt the use of smartphones in the classroom could increase their interest in seeking economic material in high categories, and there was no increase in the low category. Ini senada dengan hasil penelitian Intan, dkk (2017) yang menemukan pada kenyataannya mahasiswa Fispol Universitas Samratulangi lebih cenderung menggunakan smartphone untuk menunjang aktivitas perkuliahannya dilihat dari berbagai proses penggunaan yang telah mereka lakukan dalam hal mencari berbagai macam informasi yang berkaitan dengan ilmu yang mereka pelajari melalui berbagai fasilitas yang ada pada smartphone.

Table 3. Smartphone usage Improve of patterns in finding learning resources

Category	Frequency	%	Cumulative%
High	15	62.5%	62.5%
Middle	7	29.2%	91.7%
Low	2	8.3%	100.0%
Total	24	100%	

Table 3 shows that the majority of respondents (students participating in OSN) in Siak Regency and Pekanbaru City felt that the use of Smartphones in the classroom could increase the pattern of finding economic learning resources in the high category (62.5%), and the middle category (29.3%). Although there is an increase in the low category, the number is very small at 8.3%. This supports the research results of Lusina, et al. (2018) who found smartphone use had an influence in developing student learning patterns. The pattern of looking for learning resources that they do is writing keywords from the material sought into "google search"



Table 4. Smartphone usage Improve of individual learning patterns

Category	Frequency	%	Cumulative%
High	17	70.8%	70.8%
Middle	6	25.0%	95.8%
Low	1	4.2%	100.0%
Total	24	100%	

Table 4 shows that the majority of students participating in the OSN development in Siak Regency and Pekanbaru City felt that the use of smartphones in the classroom could improve their individual learning patterns in studying the economy in the high category (70.8%), and the middle category (25.0%). Although there is an increase in the low category, but the number is very small at 4.2%. This is in line with the results of Nursina's research, which found that smartphone use had an influence on individual learning patterns, where students were free to determine ways and sources of learning without attending to the teacher and his friends (Nursina et al., 2018). The individual learning patterns that they do are by finding more material and comparing between the material they have obtained.

Table 5. Smartphone usage Improve of group learning patterns

Category	Frequency	%	Cumulative%
High	16	66.7%	66.7%
Middle	6	25.0%	91.7%
Low	2	8.3%	100.0%
Total	24	100%	

Table 5 finds that the majority of students participating in OSN development in Siak Regency and Pekanbaru City felt that the using of smartphones in the classroom could improve group learning patterns in studying the economy in the high category (75%), and the middle category (25%). Although there is an increase in the low category, the number is very small at 8.3%. This supports the research results of Nursina, et al. that smartphone use has the influence of group learning patterns where students work together and discuss each other to complete school assignments (Nursina et al., 2018).

Table 6. Smartphone usage Reducing of smart phone for social media

Category	Frequency	%	Cumulative%
Hight	15	62.5%	62.5%
Medium	7	29.2%	91.7%
Low	2	8.3%	100.0%
Total	24	100%	



Table 6 finds that the majority of respondents (62.5%) stated that the use of smartphones in class can reduce their activities in using of smartphones for social media in the high category, and 29.2% for the middle category. Although there are those in the low category, but the numbers are very small at 8.3%. Still high respondents in middle and low categories (37.5%), this illustrates that they also do not want to leave information other than subject matter. This is in line with the results of Intan's research that smartphones by Fisipol students at Samratulangi University are also to follow every development of information available, smartphone becomes a complete grip and the right media to get general knowledge and learn new things wherever and whenever they need (Intan, et al., 2017)

Based on tables 1 to 6, in summary the comparison of the results of the 6 indicators above can be explained on Figure 2 below.

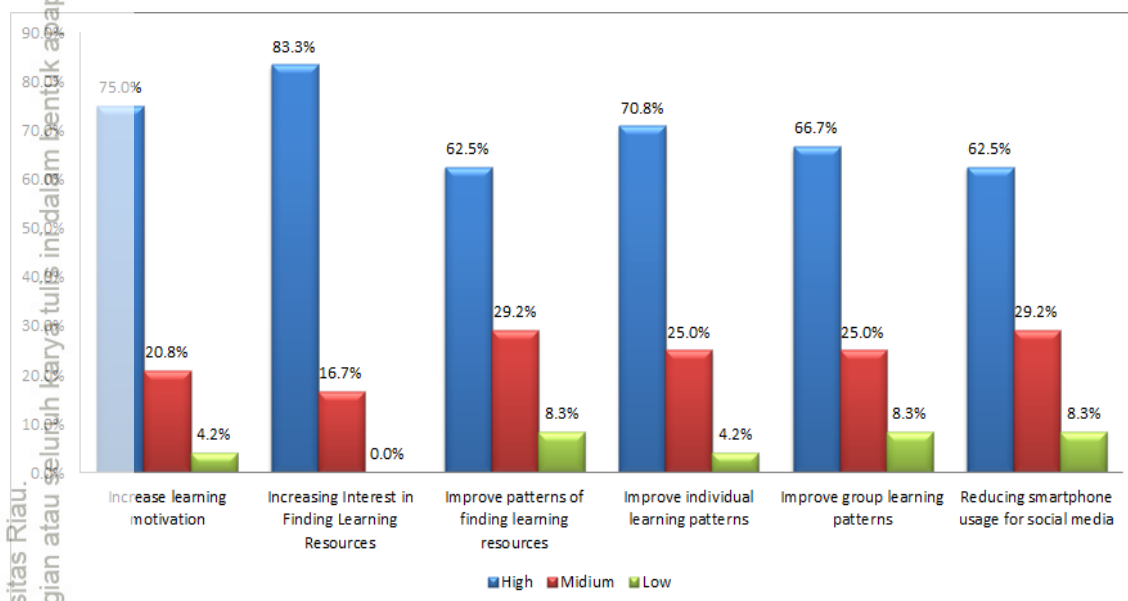


Figure 2. Comparison of Benefits of Smartphones Usage between Indicators

Figure 2 above shows smartphone use in the class of all research indicators (i.e. increasing learning motivation, increasing interest in finding learning resources, increasing patterns of finding learning resources, improving individual learning patterns, improving group learning patterns, and reducing smartphone use for social media), the majority of each can increase in the high category between 62.5% to 83.3%. The biggest influence on "increased interest in finding learning resources" (in the high category at 83.3%), followed by "increased learning motivation" by 75%. Especially in the indicator of "increased interest in finding learning resources" no respondent said his interest was low. This is in line with the results of Intan's research, (2017) that Samratulangi University students actively choose smartphone and use to support their lecture activities because they are confident in the advantages of the services provided by smartphones so that their lecture activities are supported efficiently and effectively.



Further search found that there were respondents who experienced difficulties in individual learning patterns (4.2%) and group learning patterns (8.3%) using smartphones. This causes them to perceive "smartphone usage can improve individual and group learning patterns" in the low category. In addition, it was also found that some respondents were not used to looking for OSN material using smartphones so that it took a long time

CONCLUSION

Based on the results of the research and discussion above, it can be concluded as follows.

- (1) Seventy point one percent (70.1%) of respondents feel that the use of smartphones as a source of learning in the classroom has high benefits for preparing for the National Science Olympiad (OSN). This is because with the help of smartphones, they can find material faster, more and vary
- (2) The use of smartphones in the classroom can improve: motivation to learn, interest in finding learning resources, patterns of finding learning resources, individual learning patterns, and group learning patterns in the high category. This is because with smartphones you can find and learn various information according to the needs of respondents
- (3) Sixty-five point five percent (65,5%) of respondents feel that the use of smartphones as a source of learning in OSN guidance can reduce the time of respondents in using smartphones for social media in the high category. This is because happily looking for OSN material on smartphones, it will reduce the time for social media activities.
- (4) Four point two percent (4.2%) respondents find it difficult about how individual learning patterns and group learning patterns (8.3%) in smartphone use. This is due to not having a smartphone so long that it is not used to using it

But the researchers gave the following suggestions:

1. Schools are advised to use smartphones as a learning resource in schools, but their use is under the control (command and supervision) of teachers
2. Siswa diharapkan lebih banyak menggunakan smartphone mereka untuk mencari sumber belajar dibanding sebagai media komunikasi (media sosial)





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