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The Role of Social Media in Learning Physics: Teacher and Student Perceptions

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Abstract: This study aims to determine the role of social media in learning . We know that today, social media has an indispensable role in the learning process. In addition, social media has made it a smaller world through social media so that people from anywhere in the world can interact without being limited by distance and time. This study used a mixed method consisting of qualitative and quantitative data. This research involved 308 students in Lampung province. The results of the research conducted stated that 65% of students used smartphones in learning. 73.2% of students stated that the application that is often opened is social media. 87.2% stated that the most frequently accessed social media is chatting media. 48.2% of students prefer playing on social media than learning physics. 72.3% of students stated that they prefer to discuss through chatting media. Based on the results of the preliminary study, the role of social media is very active, 48% of students stated that they use social media for learning discussions. . 43% of teachers stated that they always use social media to support learning.

Keywords: social media, physics learning, smartphone

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INTRODUCTION

In the modern era, social media and social networks drastically influence human behavior, and technology has become a daily part of people's lives in modern times like today (Raghavendra, 2018). Innovations are taking place rapidly in the field of information technology, one of which is social media and networking sites. For example, Facebook, LinkedIn, Twitter, and WhatsApp provide a new model of social interaction communication patterns (Sapountzi, 2018). So, social media refers to computer technology intermediaries facilitating the growth and sharing of ideas, awareness, career interests, information, and other methods of expression through social networks and virtual communities (Nielsen, 2017). The content generated by social media users, such as comments, posts, digital photos, video sharing, and all online interaction data, is very important and represents the lifeblood of social networks and social media sites (Russell, 2016). Social media users usually access social media services via a laptop or mobile device connected to the internet (Shepherd, 2018). Students can interact with each other to share ideas, express opinions, modify, and discuss material, this is one of the impacts of technological innovation (Birim, 2016).

Technological innovation has resulted in both positive and negative changes in the discussion of culture and society. The influence of social media and social networking sites has a significant impact on students during their transition to adulthood (Zhu, 2017). One of the constructive impacts of using social media is the public's introduction to user-generated data, ideas, and programming at a relatively young age, which has encouraged additional technological advances and increased knowledge in the student community (Intravia, 2017). However, the spread of social media has also increased depression in students and drastically changed the social atmosphere in which students thrive and learn.

The influence of technology on education has fostered network-based learning to facilitate collaboration regardless of distance (Mariki, 2013); (Rahman, 2014). The social network uses the media, one of which is a *smartphone.* The results of a survey conducted by researchers on high school students in Lampung Province stated that the intensity ofuse for *smartphone* more than 6 hours per day reached 47.6%, the time span forusage *smartphone* the most intensewas at 19.00 - 21.00 which was 72.8% which should have been This time is used by students to learn independently to do assignments. as much as 73.2% of students opened social media applications.

Social media offers modern and creative ways to build a social learning environment (Abdelraheem & Ahmed, 2018). Social media applications in the form of discussion groups can trigger and increase interactions between instructors and students (Alabdulkareem, 2015; Barhoumi, 2015; Naidoo & Kopung, 2016; Prescott et al., 2013; Rambe & Bere, 2013; Sobaih, 2016). By using social media this supports the change from teacher-centered learning to student-centered (Mihaela and Magdalena 2017) and also improves student self-regulation (Herawati, 2017); (YotDomínguez & Marcelo, 2017). In line with Amry's research (2014) states that learning usingaccess *chat* can support an active learning process. The benefit of implementinglearning *mobile* is that it provides a forum for students to discuss with each other and expand the learning environment anywhere and anytime (Crescente & Lee, 2011).

This study aims to determine how social media is related to student learning behavior. The study investigates social media use, viewpoints, opinions of interests,

media use issues, and other respondents' concerns. This study illustrates the effect of increasing access to information and social media on 831 respondents from different regions of Pakistan, including issues related to the structure and use of social networks, social respondents reason. using social media, and how respondents see the positive and negative aspects of networking sites.

METHOD

Research Design & Procedures

This research uses mixed methods, consisting of qualitative data and quantitative data. The sampling technique was carried out by purposive sampling

Population and Sample.

Data collection was carried out by giving questionnaires to 308 high school students and 15 teachers in Lampung province.

Data Collection and Instrument

Instruments used a Likert scale with four options, namely (1) strongly agree, (2) agree, (3) do not agree, (4) strongly disagree (Budiyono, 2017) The assessment instrument is provided in the form of a google form.

Data Analysis

The results of the respondents' assessment were analyzed by calculating the average score obtained for each component, then converted to a qualitative statement according to Table

Table 1. Assessment and Decision

Score Average Score	Decision
4.20-5.00	Very suitable
3.40-4.19	Suitable
2.60-3.39	Sufficiently suitable
1.80-2.59	Less suitable
1.00-1, 79	Not according to

RESULT AND DISCUSSION

Preliminary research results based on needs analysis were obtained from the *google form* filled in by physics teachers and students can be seen in Table 2 and table

Table 2. Results of Student Needs Analysis

NO	Statement for Student	Percentage
1	I like learning physics	65%
2	I prefer to play social media than learning physics	48.5%
3	Since junior high school already has a smartphone	51.9%
4	The intensity of smartphone use every day is more than 6 hours	48.2%
5	The time span for the most intense smartphone usage is 19.00-21.00	46.6%
6	Always use a smartphone for learning	65%
7	teacher gives students the opportunity to find information with their friends when discussing	93.5%
8	teacher uses social media assistance to discuss in learning	48%
9	Teachers give students the opportunity to find other sources	100%
10	Teachers give students the opportunity to solve problems in their own way	87%
11	Teachers give students the opportunity to experiment	53.8%
12	Teachers give students opportunities students to present experimental results	59.2%
13	Social media applications that are often on smartphones	7 3,2%
14	Social media that is frequently opened is the media chat	41.5%
15	most frequently opened chat media is WhatsApp	87.2%
16	One of your choices during UNBK is physics lessons	32%
17	Prefer the learning process using social media	72 , 3%

This study aims to determine the role of social media in learning. 65% of high school students in Lampung province, consisting of 308 respondents, stated that they always use smartphones in learning. From table 2 it can be seen that 51.9% of students have owned smartphones since junior high school (SMP). 48.2% of students intensity use smartphones more than 6 hours a day. As many as 46.6% of students use it at night which should be used for studying or doing assignments. 73.2% of students stated that the most frequently opened application is social media. 87.2% stated that the most frequently accessed social media is chatting media. 48.2% of students prefer playing on social media than learning physics. Students find it difficult when learning physics, this is evidenced by when UNBK only 32% of students chose physics lessons to be tested. 81.4% of respondents stated that it was very difficult to learn physics material. due to several factors such as teachers only giving assignments without being given an explanation, difficulties in doing assignments, too many assignments, constraints on quotas and internet networks, no teaching materials such as modules to make it easier for students in learning and so on, so that learning becomes less effective. Therefore, researchers recommend social media assisted learning in the learning process so that students don't feel bored. In addition, students and teachers can interact and share information without being limited by distance and time.

Table 3. Results of Teacher Needs Analysis

NO	Statement for Teachers	Percentage
1	I do online and offline learning	100%
2	I use social media more in learning	25.8%
3	On average my students have smartphones	82.5%
4	The intensity of smartphone use every day is more than 6 hours	37.2%
5	The time span for the most intense smartphone usage is 19.00-21.00	57.6%
6	Always use a smartphone for learning	43%
7	Teachers give students the opportunity to find information with friends when discussing	98%
8	Teachers use social media assistance to discuss in learning	58%
9	Teachers give students the opportunity to find other sources	100%
10	Teachers give students the opportunity to solve problems in their own way	93%
11	Teachers give students the opportunity to experiment	43.2%
12	Teachers give students opportunities students to present the results of the experiment	70.2%
13	Social media applications that are often in smar cellphone	75.2%
14	Social media that is frequently opened is the media chat	51.3%
15	The most frequently opened chat media is WhatsApp	90.2%
16	One of your choices when UNBK is physics lessons	22%
17	Prefer the learning process using social media	43%

From table 3 100% of teachers say they use online and offline learning. Only 25.8% of teachers use social media in learning. 100% of teachers stated that it provides opportunities for students to seek various information. Only 22% of the total students took physics at UNBK. The difficulty of the teacher when teaching physics using social media when the material is arithmetic, students find it difficult to understand.

This is in line with research by Stathopoulou et al. (2019) revealed that including social media in education has a positive impact on learning. Social media is a means of support for students during the learning process, and is also useful for educators. The

study's findings reveal that social media has both positive and negative impacts on student learning (Lee, 2017). The results of the study by Balakrishnan and Gan (2016) show that there is a positive impact on student achievement and motivation. Another study revealed that learning using social media makes it easier for teachers to cope with different student learning styles (Law, 2019). whereas social media has a broader effect on students in the classroom (Kaufer, 2011).

CONCLUSION

Based on research data regarding the role of social media in learning, it can be concluded that based on the results of a preliminary study, the role of social media is very active, 48% of students stated that they use social media for learning discussions. 43% of teachers stated that they always use social media to support learning.

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