



## Smartphone Based Learning Media: Elementary School Teachers' Perspective on Technology Intervention in Teaching

Intan Kusumastuti Zamuri; Sarwanto; Rukayah

Postgraduate Program of Elementary Education, Faculty of Education and Teacher Training, Universitas Sebelas Maret, Indonesia

<http://dx.doi.org/10.18415/ijmmu.v7i4.1556>

### **Abstract**

Technology assists students to gain and accelerate their skills to solve problems and manifest their experiences to relate it into the learning in the society. The use of media by applying smartphone is in line with the context of today's phenomena where technology has become the essential and integrated part in most human life, especially education. It offers information back up in unlimited supply. Technology in smartphone as learning media gains students to be active within the instructional process by affected activities such as in-class leisure activities, physical activities and social interactions. It supports students' to learn in more reflective and progressive way. This study aims to understand elementary school teachers' perspective in seeing technology by smartphone used as the learning media in the instructional process occurred in the classroom. There are 20 teachers across area of Tulung district, Klaten regency, Indonesia by varied socio economic levels. The data in this study is gathered by semi-structured interview and followed by descriptive analysis. The results show that applying smartphone in the classroom activities were found to be beneficial for the students. Teachers believe that science and social lesson, physical activities, and in-class fun activities. Those activities were represented such as in digital games, e-learning activities, moral and values education. The teachers were also faced with some obstacles of smartphone implementation during the lesson consisting of; time management, teachers' technological skill and background, and controlling students' behavior.

**Keywords:** *Smartphone Based Learning; Technology; Media; Elementary Education; Teachers' Perspective*

### **Introduction**

Technology has changed and developed rapidly recently and contributed to the shifting of humans' life in any aspects. Smartphone as one the result of technological development brings significant role to help people to meet their necessities as well in field of education. It helps students to expand their skills, values and knowledge to actively participate in the context of classroom activities. Teachers holds very essential role to determine the most appropriate technology or suitable for his/ her students to support them in accomplishing the learning goals through effective process, enjoyable and interesting learning (Gozutok, 2000). It requires tools and techniques to deliver the information within the learning process from various resources (Salem & Salem, 2015). On the other hand, it is found to be burden for

students at elementary schools level to comprehend conceptual basis of knowledge. By means of technology, it can link the existed gap prepared for elementary school level (Sevinc, 2004). The development of technology effects on a country culture system, teachers' teaching method from paper based to information, communication and technology (Zamuri, Sarwanto, & Rintayati, 2018). Learning innovation within its media is required to meet the learning goals of effective learning (Kurniasari, Baedhowi & Soesilo, 2018).

The use of technology in smartphone as the media for learning is based on aspects which mostly guide and encourage students in an interactive practices, student centered activities and self-experience through trial and error. It becomes a convenient media to acquire creative and innovative teaching activities by teachers. Facilitating to learn through challenging experiences is the chance for them to have free exploration to meet their curiosities of certain subject for real learning in a low risk environment (Frossard, Barajas & Trifonova, 2012). By the mixture of information and technology with educational matter, it makes the e-learning concepts be popular and implemented in most of today's education system or curriculum. Consequently, smartphone is more applied to support the learning management system. It has possibilities to facilitate self-study, learning interest and motivation reaching the instructional purposes effectively (Ching & Chung, 2012). Encouraging students to have critical thinking skills and challenging them with authentic tasks (DeKanter, 2005).

In setting up the smartphone and its technology to be applied in the teaching- learning activities must also considers the subjects or topics spreading in the elementary school curriculum coverage. As it is known that most of them represents what is seen to be real context and object in the true world. What is included in the content inserted through the smartphone services should be taken from real life in order to persuade their assumptions towards the lesson in positive way. It is done to help them in grasping the relation and conceptual message of knowledge to real life. The designed activities should encourage both teachers and students to come along together actively in acquiring learning results and motivation as well. It creates creative learning atmosphere (Frossard, Barajas & Trifonova, 2012).

Unique experience gained by the people by having smartphone as it has a capability to be operated anytime and anywhere (Alan & Eyuboglu, 2012). Indian smartphone users recorded that over fifty percent of the users are active on the social networks, instant messaging and browsing for some information (Deloitte, 2015). It can be an addictive ways turning to be habit in behavior (Griffiths, 1998). The addiction concept that become to characteristics covering salience, euphoria, and conflict should become concern (Coventry & Brown, 1993). The activities can be turned into positive ways by relapsing and reinstating to go in positive attempts on education and carrer opportunities (Alavi et al., 20112, Griffiths, 1996).

To support the learning efficiency by applying smartphone as the learning media, there some significant aspects that should be considered covering; context, learner, teacher, and learning environment. Learning efficiency itself also covers three main subjects namely; cognitive, affective and psychomotor (Chang & Wu, 2014). There are some supporting factors in order to achieve the successful of this technology intervention within the class consisting of duration and learners skills or experience. This study explores on elementary school teachers' understanding and perspectives on integrating smartphone technology as the media in teaching- learning activities.

## ***Methodology***

### ***Research Model***

It is based on qualitative research method where interview was applied to gather about individuals' knowledge, values, beliefs, and perceptions about cases and acts (Yildirim & Simsek, 2006).

A semi –structured interview was taken to find out teachers’ perspective on smartphone usage in the instructional process.

### ***Participants***

This study included 20 elementary school teachers coming from Tulung district, Klaten regency, Indonesia. In selecting the teachers, the maximum variation sampling was implemented to participate. It also covers teachers’ socio-economic background and length of teaching experience which are divided into three types namely; low, middle, high level.

### ***Data Collection and Analysis***

As the data was gathered by semi-structured interviews, the researcher arranged and set up an interview form by involving experts to overview it leading for recommendations for some necessary revisions. The final interview form should meet the criteria stated by the expert. Before conducting the question-answer activities, the participants were explained about the aim of the interview and to make agreement for the permission of data collection by documents. It was held on the first semester of 2019/2020 academic year. The process in analyzing the data was started by organizing the data in form of research themes and questions. The recording in term of audio-records was transcribed to be transferred into written forms. The agreement/ agreement + disagreement x 100 calculation was implemented to the reliability (Miles & Huberman, 1994).

### ***Results and Discussions***

The findings of the research related to the opinions given by the teachers on the themes of smartphone as learning media were presented in table below. It captured on how teachers define the concept into some perspectives.

**Table 1 Teachers’ Definition on smartphone as learning media**

Low socio-economic level	Active learning
	Learning from computers
	Fun Learning
Middle socio-economic level	Social Learning
	Learning from experiences
	Learning from media, computers
High socio-economic level	Increasing problem solving skills
	Fun learning
	Interactive learning
	Improving problem based learning
	Using critical thinking
	Increasing strategies

From the Table 1, it describes different understanding on application of smartphone as learning media among the teachers. Most of them who come from low and middle socio-economic level assumed it as fun learning while high socio-economic level defined it as interactive learning. There was a testimonial statement during the interview told that “*Smartphone can be used to facilitate students for*

*browsing and searching information which leads to problem solving. It helps them to be independent and improving their thinking skills”.*

Regarding to the teachers’ perceptions in viewing smartphone as a media for learning, it can be captured some of their opinions documented in written form in Table 2.

**Table 2 Elementary school teachers’ opinion on smartphone as learning media**

Low socio-economic level	Increase students’ motivation
	Time consuming
	Increase students’ interest
Middle socio-economic level	Feeling happy
	Gaining students’ independent
	Convenient for most of the subjects taught
High economic level	Connecting concept and real life
	Not suitable for evaluation
	Require more resources
	Not suitable for evaluation

The data in Table 2 shows that teachers from low socio-economic level stating as most of the use smartphone for learning media carry out more advantages on the field of increasing students’ motivation and interest. Compared to the teachers at the middle-high socio-economic level, most of them would rather say that it did not meet the criteria for evaluation. There were some aspects that need to be considered to make use of smartphone as the media for evaluation. One of the participant said that, *“By assisting the smartphone on the lesson, it pushes students’ interest and motivation to learn more and get to know of any related or matter of discussion properly”.*

Considering to the subjects taught at elementary school, there were some subjects that most likely be in line with the use of smartphone as the learning media. The detail descriptions taken from the interview is showed on Table 3.

**Table 3 Matching subjects to smartphone application as the learning media**

Low socio-economic level	Social studies
	Citizenship
	Language literature
Middle socio-economic level	Science studies
	Social studies
	Mathematic
High socio-economic level	Information communication technology
	Information communication technology
	Mathematic
	Science studies
	Social studies

Referring to the Table 3, it can be stated that all levels of socio-economic background comes to agreement that the content on social studies meet the term and condition applied in smartphone technology used as the learning media. Some of the teachers coming from middle and high socio-economic level expressed that information communication and technology and science studies also seen to be prospective to be integrated with the use of smartphone. One of the participant declared that, *“The*

*use of smartphone contributes more on science studies as it directly relates to many resources which need t'o describe of abstract concept such as; natural phenomena into an audiovisual presentation”.*

The results of this study exposed that teachers' understanding on smartphone as learning media can be implemented in many ways of teaching method by using cooperative learning. It also contributes positively for the students to have student center learning system. It can stated that teachers' views on the definition of smartphone as learning media from the low to high socio-economic status is mostly seen as learning activity where enables students to learn through experience and lead them to be active (Squire, 2003). While the high socio-economic level stated that it gives more chances to have interactive learning where students not only build a contact with the object of smartphone but also their classmates as well.

The implementation of smartphone as learning media needs to consider to organize the time as becoming the most influential part during the lesson. Some other problems might come up such as less participation, students' behavioral problems and digital literacy. It is very important for the teachers to plan and evaluate of any activities before and after conducted in the classroom (Gunes, 2010). Dealing with the varied of smartphone owned by the students, it could have different specifications, feature and setting. Those could result in weak technical support, allotment time for preparation and less chance for collaborative action (Perotta, Featherstone, Aston. & Houghton, 2013).

## **Conclusion**

Assisting teachers to understand in how to apply new concept of learning media by means of smartphone as the representation of technology inclusion is found to be essential. Teachers' literacy on software, pedagogical matters, and ICT come to be priority as the major attention to develop successful instructional process by technology intervention (Ketelhult & Schifter, 2011). Smartphone as the learning media supports the elementary school curriculum covering applying new teaching strategies, using ICT, and student centered approach. The fast growing on technology integrated in smartphone in any fields including education is clearly helping and encouraging teachers to innovate further in reaching the instructional goals at very best.

## **References**

- Alan, A. E., & Eyuboglu, E. (2012). 11<sup>th</sup> International marketing trends congress 19-21<sup>th</sup>. Venice – Italy.
- Alavi et al., (2012). Behavioral addiction versus substance addiction: Correspondence of psychiatric and psychological views. *International Journal of Preventive Medicine*, 3(4), 1-10.
- Conventry, K.R., & Brown, R. (1993). Sensation seeking, gambling and gambling addictions. *Addiction*, 88(4), 541-554.
- Chang, S., & Wu, C. (2014). Meta-analysis of the critical success factors for the students' game based learning efficiency. *Procedia- Social and Behavioral Sciences*, 20, 802-810.
- Cheng, C., & Chung, H., S. (2012). A game based learning system for improving student's learning effectiveness in system analysis course. *Procedia- Social and Behavioral Sciences*, 31, 669-675.
- DeKanter, N. (2005). Gaming redefines interactivity for learning. *TechTrends: Linking Research to Improve Learning*, 49(3), 26-31.
- Deloitte Consulting, S.I.U. (2015). Smartphone owners in India are increasingly obsessed with their devices. Deloitte Mobile Consumer Survey 2015. Deloitte Touche Tohmatsu India LLP. Press release.

- Frossard, F., Barajas, M., & Trifonova, A. (2012). A learner-centred game-design approach. Impacts on teachers' activity. *Digital Education Review*, 21, 13-22.
- Gozutok, D. (2000). *Ogretmenligimi gelistiryorum*, Siyasal Yayinlari, Ankara.
- Griffiths, M. (1996). Behavioral addiction: an issue for everybody? *Employee Councelling Today*, 8(3), 19-25.
- Griffiths, M. (1998). Internet addiction: does it really exist. *Psychology and the Internet: Intrapersonal, interpersonal and Transpersonal Implications*, 10(5), 619-625.
- Gunes, G. (2010). Iiklgretim ikinco kademe matematik ogretiminde oyun ve etkinliklerin kullanimina iliskin ogretmengorusleri. Yayimlanmamis yukses lisans tezi. Kafkas Universitesi: Kars.
- Ketellhut, D. J., Schifter, & Catherine, C. (2011). Teachers and game-based learning: improving understanding of how to increase efficacy of adoption. *Computers and Education*, 56 (2), 539-546.
- Kurniasari, R. I., Baedhowi., & Soesilo, M. A. (2018). Development of mobile educational game of economics. *International Journal of Multicultural and Multireligious Understanding*, 5(4), 355-362.
- Miles, M. B., & Hubberman, M. A. (1994). *An expanded sourcebook: qualitative data analysis*. London: Sage Publications.
- Perotta, C., Featherstone, G., Aston, H., & Houghton, E. (2013). Game-based learning: latest evidence and future directions (NEFR research programme: innovation in education). NEFR published in April 2013.
- Salem, F. S., & Salem, O. S. (2015). Factors Influencing the Learning Management System (LMS) Success Among Undergraduate Students in Limkokwing University of Creative Technology Malaysia. *International Journal of Multicultural and Multireligious Understanding*, 2(3), 17-26.
- Sevinc, M. (2004). Erken cocukluk gelismisi ve egitiminde oyun, Morpa Yayinlari: Istanbul.
- Squire, K. (2003). Video games in education. *International Journal of Intelligent Simulations and Gaming*, 2(1), 20-29.
- Yildirim, A., & Simsek, H. (2006). *Nitel arastirma yontemleri*. Ankara: Seckin Yayinlari.
- Zamuri, K. I., Sarwanto., & Rintayati, P. (2018). Analisis pentingnya pemanfaatan sumber belajar dalam mendukung pembelajaran di sekolah dasar. Proceeding Seminar Nasional Pendidikan Strategi Pengembangan Pendidikan di Era Disrupsi, 576-580. Surakarta: Pascasarjana Universitas Sebelas Maret.

## Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).