How elementary school teachers use ICT-based learning media?

Ratna Hidayah¹, Ngatman², Tri Saptuti Susiani³, Moh Salimi⁴, and Suhartono⁵

¹,²,³,⁴,⁵ Elementary Teacher Education of Universitas Sebelas Maret
Jl. Slamet Riyadi No. 449, Surakarta 714301, Indonesia

Email: ¹ ratnahidayah@staff.uns.ac.id

Abstract. Integrated learning in elementary schools requires learning media as a means of communication. Research is needed on analysis of the media use of learning in elementary school learning. The purpose of this research is to examine how the elementary school teachers of perception and motivation to implement ICT-based learning media in learning activities. In this study using a quantitative approach to the type of survey, researchers used surveys, interviews and observations to collect data. The results of quantitative analysis of elementary school teachers are often categorized in learning media use. These results show that teachers have a good perception of the utilization of ICT in learning activities. However, to implement ICT-based media is not optimal.

1. Introduction

Education programs in schools need to be more attentive to the development of cognitive, affective, and psychomotor. The ideal learning is that it can bring students to reach their goals. Media Learning for use optimizes the learning process. For teachers, learning media helps to make concepts or ideas concrete and motivate students to be active. For students, the media can help to think and do critical. Thus, the media can help teacher and student assignments to achieve the basic competency objectives. Teachers need to know the learning needs and problems of the students’ difficulties. Related to that, the media needs to be developed based on relevance, basic competencies, materials and student characteristics. Teachers can play a role as a creator that creates and utilizes the right, efficient, and enjoyable media for the students. Many technologies and applications have been developed to support and facilitate human activity including education. A recent educational environment around Japanese teachers, the use of ICT is currently promoted in education [1]. The development of ICT, has added the source and medium of learning in various forms, such as textbooks, modules, transparency OHP, slide Power Point, images/photographs, animations, movies/videos, television broadcasts, radio broadcasts, Hypertext, WEB pages, programs Computer-assisted learning, and software learning support applications, professional teachers should be able to choose, develop and utilize various types of media learning by utilizing the ICT.

In recent years, the utilization of ICT in education has evolved from a level of primary, intermediate, to college, although the variation and focus of the utilization differs in each institution. The purpose of ICT-based learning media is to give students the ease of learning. The development of ICT has provided interaction opportunities between teachers and students, among students learning resources can occur anytime and anywhere. ICT-based Learning Media makes presenting the material more interesting and enjoyable. Implementation of learning with ICT media can increase the...
knowledge of elementary school students [2]. ICT in learning helps students become more concentration, focused, and active, so learning becomes more interesting [3]. Students that often use computers for self-study significantly positively impact direct, indirect. ICT-based Learning media form that is developed effectively to improve student learning outcomes [4], [5].

In addressing the technological developments, teachers must be able to master the technology in order to develop ICT-based learning media. On the other hand, ICT-based Learning Media provides a challenge for teachers to be able to master it so that it can utilize ICT effectively and efficiently in the teaching and learning process. Many ICT-based learning media that have been utilized can be adopted by teachers for the learning to be done. Adoption and integration of ICT is very important in knowledge access and offset the modern developments [6]. In reality, teachers are still looking to be comfortable teaching with conventional methods. Guru has now understood and mastered ICT but in reality appears to not utilize and develop ICT-based media. Teacher of the theory understands and develops the clear adoption process of ICT, but in less implementation [7], [8]. There are teachers who still cannot use the computer. Ability in ICT literacy, information utilization and high management among high school students, while all others are low, especially computational thinking [9]. From existing research on the development and problematic of learning media, then the study aims to examine How the teacher perceptions about the utilization of ICT in learning activities and how elementary school teachers use learning media in ICT?

2. Method
This research uses quantitative approaches with survey types. This research aims to uncover the phenomenon of elementary school teachers in Kebumen in using ICT-based learning media. Based on its purpose, research surveys are conducted for many purposes, according to [10] can be classified into three, namely for the purpose: Description of the symptoms, explanation, and exploration. In this study, it aims to describe the symptoms. This study was conducted in Kebumen, with the research subject of 50 elementary school teachers. The sampling techniques used in this study are simple random sampling. The study used polls, observations, and interviews.

3. Result and Discussion
In this study, there were three findings described

3.1. Use of Learning Media
Based on the results of the poll about the use of media learning in general elementary school teachers already use learning media either based on ICT or not.

| Teachers use Learning Media | n | % |
|----------------------------|---|---|
| always                     | 0 | 0 |
| often                      | 27| 54|
| sometimes                  | 23| 46|
| never                      | 0 | 0 |
| total                      | 50| 100|

Based on interviews, all teachers state that the use of learning media is important. ME states often use the learning media every day on the basis of "it is unlikely that learning will happen if there is no media". AD teacher stated that "Sometimes I use learning media if it's needed when the material is difficult for students". From this statement, it is concluded that the teacher has the understanding and confidence that the learning media plays an important role in facilitating learning, but in practice still not optimal in using the media. But there are still teachers who have not yet had a positive perception
of the importance of media. Like the results of the research [11] many teachers do not understand that the media is a learning tool to make it easier to achieve the learning objectives.

Teacher perception of ICT-based learning media use can be seen from the perceived usability and ease of use. Teacher perception of ICT-based media usage in table 2.

| Table 2. Perceptions of Teachers about ICT based Learning |
|----------------------------------------------------------|
| Perceived usability and ease of use | strongly agree | agree | neither agree nor disagree | disagree |
| ICT can make learning process more effective. | 40 | 10 | 0 | 0 |
| ICT can create various learning activities. | 43 | 7 | 0 | 0 |
| ICT has given benefits to me as a teacher. | 16 | 34 | 0 | 0 |
| ICT can improve my teaching performance. | 13 | 36 | 1 | 0 |
| ICT can foster positive attitudes of students towards learning. | 8 | 41 | 1 | 0 |

Based on table 2 it can be concluded that the teacher has a good perception of ICT in learning. Master SJ stated "ICT makes it easy to deliver materials to students". Teacher WHY revealed that "the existence of ICT makes students more active to develop their own knowledge". ICT has opened up an extensive arena providing opportunities for educational improvement, especially in teaching, where teaching and learning can be place anytime and anywhere [12]. This positive perception is not like implementation in reality. Teachers look not to utilize ICT in optimal learning.

The use of the highest book use. DK states "Every student has a material book, so the book is the most practical medium". There are rare teachers and never use power points because there are 2 reasons; Do not master the computer and the absence of a projector in class. Almost all teachers ever use images, video and audio. MRK "The use of picture media, video and audio adapt the material to be taught". Multimedia utilization is not optimal and there is no use of multimedia and e-learning because; Lack of ability to master the field of multimedia and e-learning, in addition to the absence of adequate facilities. The limitations of ICT infrastructure, as barriers inhibit the full exploitation of ICT in teaching and learning such as Internet connection. The teacher has problems related to facilities and technical expertise in using ICT in learning activities [13]. Teachers should be able to use ICT and be able to integrate ICT into learning. A teacher who is able to integrate ICT in teaching means that the teacher is able to make a richer learning environment in the classroom [14]. and now social media is being used to support learning activities [15] [16].
3.2. Type of Learning Media Used

Learning Media has two types: media that is deliberately designed or created specifically for learning and media that is not designed or built specifically for learning but can be utilized for learning [17].

| Table 3. Types of learning Media used |
|--------------------------------------|
| **strongly agree** | **agree** | **neither agree nor disagree** | **disagree** |
| Media that was in school | 9 | 27 | 14 | 0 |
| Media created by teachers | 0 | 19 | 31 | 0 |

Teachers look more pleased using existing media than making their own. ADE, "Making use of existing media is more practical". MS states that "making the media takes a lot of time while we have other jobs".

3.3. Students ' Motivation and Interest in the Media

The use of learning media is believed to affect students ' attention and interest.

| Table 4. Students ' Motivation and Interest in the Media |
|--------------------------------------------------------|
| **strongly agree** | **agree** | **neither agree nor disagree** | **disagree** |
| ICT can make learning activities more enjoyable and interesting | 40 | 10 | 0 | 0 |
| ICT can increase students’ motivation | 16 | 34 | 0 | 0 |

The teacher's attitude towards ICT refers to the perception of a profitable or unprofitable teacher for the use of ICT in the teaching-learning process. Data shows the teacher has the perception and confidence that ICT in this learning provides an advantage. Supposedly, this positive perception and belief should be positively influential also towards the teacher's attitude of ICT use in learning. The teacher's positive attitude towards the use of technology can provide useful insight into the adoption and integration of ICT [18]. Based on the interview teachers who use almost any type of media because it can use ICT with confidence. The case study findings supported by [19] who found that a person's experience with computers and attitudes towards the computer can affect the use of technology in the classroom.

4. Conclusion

This research shows that teachers have a good perception of the utilization of ICT in learning activities. However, to implement ICT-based media is not optimal. It is important for teachers to continually improve their capabilities and enrich their knowledge related to the use of ICT through training, whether held by schools or other institutions so that teachers can vary teaching methods or Strategy.

References

[1] S. Okumura, “Homeroom Teachers or Specialist Teachers?: Considerations for the Workforce for Teaching English as a Subject at Elementary Schools in Japan,” *Asian J. Educ. Train.*, vol. 3, no. 1, pp. 1–5, 2017.

[2] E. W. WINARNI, E. P. PURWANDARI, H. LUSA, and S. DADI, “The Impact of Thematic Learning Integrated ICT in Tabot Bengkulu as Cultural Ceremony toward Social Interaction
Knowledge in Elementary School,” Asian J. Educ. Train., vol. 4, no. 2, pp. 70–74, 2018.

[3] J. S. Sahlin, A. Tsertsidis, and M. S. Islam, “Usages and impacts of the integration of information and communication technologies (ICTs) in elementary classrooms: case study of Swedish municipality schools,” Interact. Learn. Environ., vol. 25, no. 5, pp. 561–579, 2017.

[4] R. Nursanti, Sugianto, and A. Hartoyo, “Pengembangan media pembelajaran berbasis ICT untuk meningkatkan kemampuan representasi matematis siswa dalam materi SPLDV,” J. Pendidik. dan Pembelajaran, vol. 4, no. 5, pp. 1–11, 2015.

[5] Sintia Yuliandari; Eko Wahjudi, “Pengembangan Media Pembelajaran Berbasis Multimedia Interaktif pada Mata Pelajaran Ekonomi Materi Jurnal Penyesuaian Perusahaan Jasa,” J. Penyesuaian Perusahaan, vol. 1, no. 1, pp. 1–9, 2016.

[6] N. Law, W. J. Pelgrum, and T. Plomp, “Pedagogy and ICT in schools around the world: findings from the SITES 2006 study,” CERC Studies in Comparative Education, no. 23. p. 296, 2008.

[7] Buabeng-Andoh Charles, “Factors influencing teachers’ adoption and integration of information and communication technology into teaching,” Int. J. Educ. Dev. Using Inf. Commun. Technol., vol. 8, no. 1, pp. 136–155, 2012.

[8] S. Hennessy, K. Ruthven, and S. Brindley, “Teacher perspectives on integrating ICT into subject teaching: Commitment, constraints, caution, and change,” J. Curric. Stud., vol. 37, no. 2, pp. 155–192, 2005.

[9] H. S. Kim, S. H. Ahn, and C. M. Kim, “A New ICT Literacy Test for Elementary and Middle School Students in Republic of Korea,” Asia-Pacific Educ. Res., vol. 28, no. 3, pp. 203-212, 2019.

[10] E. R. Babbie, “The Logic of Sampling,” in The Practice of Social Research, 2004, pp. 179 217.

[11] F. Rozie et al., “PERSEPSI GURU SEKOLAH DASAR TENTANG PENGGUNAAN MEDIA PEMBELAJARAN SEBAGAI ALAT BANTU PENCAPAIAN A. LATAR BELAKANG MASALAH Pendidikan yang sangat merupakan penting dan bagian tidak mandiri serta tanggung jawab kemasyarakatan dan ke bangsaan ”, Berdasarkan, pp. 1–12.

[12] J. Cradler and E. Bridgforth, “Recent Research on the Effects of Technology on Teaching and Learning,” 1993.

[13] M. Mahdum, H. Hadriana, and M. Safriyanti, “Exploring teacher perceptions and motivations to ICT use in learning activities in Indonesia,” J. Inf. Technol. Educ. Res., vol. 18, pp. 293 317, 2019.

[14] N. S. Ndlovu and I. Moll, “Teachers, technology and types of media: Teaching with ICTs in South Africa,” vol. 4, no. September, pp. 124–130, 2016.

[15] R. Blair, D. Millard, and J. Woollard, “Perceptions of school children of using social media for learning,” Int. J. E-Learning Corp. Gov. Heal. High. Educ., vol. 16, no. 2, pp. 105–127, 2017.

[16] N. A. A. Almansour, “EDUCATIONAL USES OF SOCIAL MEDIA IN LEARNING BY UNIVERSITY STUDENTS,” ProQuest Diss. Theses, 2019.

[17] Sahid, “Pengembangan Media Pembelajaran Berbasis ICT,” Pendidik. Mat. FMIPA UNY, pp. 1–16, 2007.

[18] K. F. Hew and T. Brush, “Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research,” Educ. Technol. Res. Dev., vol. 55, no. 3, pp. 223–252, 2007.

[19] J. Schiller, “Working with ICT: Perceptions of Australian principals,” J. Educ. Adm., vol. 41, no. 2, pp. 171–185, 2003.