

Analysis of Using Literacy Learning Web in Elementary School: Survey of Elementary School Teachers in Pekanbaru

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Abstract. Currently, technology plays a crucial role in various aspects, including education. Therefore, this study aims to provide an overview of the use of web-based technology in literacy learning among teachers in elementary schools. The research methodology employed a quantitative approach through a survey involving 55 teachers. The findings reveal that 74.55% of teachers have received training in learning technology, leading to 92.73% of them implementing technology-enhanced learning in schools. Particularly during the pandemic, teachers have been compelled to rely on learning technology and develop interactive learning media. However, it is important to note that many teachers still lack proficiency in utilizing technology, as only 47.27% of them are able to create web media or blogs as learning tools. The survey results also indicate that 74.55% of teachers face difficulties in creating online learning materials, while 65.45% struggle with teaching online. Surprisingly, only 1.3% of teachers reported using technology or the web in literacy learning, while a significant majority (83.6%) have never utilized it. Additionally, 3.6% of teachers expressed unfamiliarity with web-based technology. These findings suggest that the integration of web-based technology in literacy learning is still limited, possibly due to age-related constraints and a lack of expertise in the IT field among teachers.

1 Introduction

Technology in the era of the Fourth Industrial Revolution (4.0), the role of the internet is very influential in various aspects of human life, including education [1]. One significant impact on the educational environment is that the teaching and learning process is more technology-enabled [2], emphasizing the importance of digital literacy learning [3]. The learning approach adopted in the 2013 curriculum is student-centered learning, as stated in Minister of Education and Culture (Permendikbud) Decree no. 81A regarding the implementation of the 2013 Curriculum [4]. The Minister of Education and Culture has highlighted the need for certain changes in learning patterns. This includes shifting from one-way learning structures (teacher-student interaction) to interactive learning, transitioning from isolated learning patterns to networked learning, and transforming passive learning patterns into

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active-seeking learning [5]. The use of technology in learning has also been influenced by the Covid-19 outbreak, which has affected the global learning system.

The Covid-19 pandemic has brought about significant changes in various fields of human life, including social, economic, and education. Group activities that were previously conducted together are now being cancelled to break the chain of spreading this deadly virus. Particularly in education, children's learning activities that were traditionally carried out in schools now need to be conducted at home through online systems with parental guidance [6]. The competence of teachers as professionals must be demonstrated by utilizing various technology-based media [7], especially in literacy learning. Currently, literacy learning is still emphasized to assess students' learning progression, including the characteristics, breadth, and depth of the learning material [8]. The depth of the material must be adjusted based on students' development so that the scientific concepts they have studied can progress accordingly. This learning approach emphasizes language literacy, which comprises four abilities: reading, writing, listening, and speaking [9]. To determine students' language competence, literacy assessments covering these four abilities need to be conducted. This study provides an initial overview of the use of literacy learning technology employed by teachers in elementary schools in alignment with government regulations that support 21st-century learning.

2 Related Work

In today's education, it is crucial to ensure that students possess language learning skills that support 21st-century education [10]. These skills focus on using technology and information media, working with life skills, and surviving in the 21st-century. They include (1) critical thinking and problem-solving skills, (2) communication skills, (3) creativity and innovation skills, and (4) collaboration skills. Literacy skills are one of the ways to develop these 21st-century skills and measure students' language literacy abilities [11].

Considering the data from the PISA survey, reading ability in Indonesia is relatively low, necessitating changes in education, particularly in the learning methods employed by teachers. Introducing changes in reading learning media can foster interest and motivation, thereby enhancing reading literacy. Reading is an integral part of education as it permeates every aspect of people's lives [12]. It is crucial to make reading instruction captivating, especially for elementary school students, in order to increase their interest and motivation. Blogs can be an effective medium for reading instruction.

Web-based technology in education complements knowledge or understanding on a broad scale, making it easily accessible to anyone, anytime [13]. The use of technology has significantly increased during the pandemic, aided by the internet and mobile applications. This accessibility has inspired teachers to develop media and learning resources using the web. Teacher training in this area has become more widespread, with most institutions offering training programs to assist teachers in developing learning resources that utilize technology. Web-based learning, such as blogs via computers, offers advantages by reducing the need for face-to-face contact.

3 Method

This research employs a quantitative method in the form of a survey [14], which is administered to primary school teachers using Google Forms as the questionnaire instrument due to constraints in direct meetings. The study sample consists of 55 teachers representing several schools. The research instrument assesses the teachers' understanding of technology

and literacy learning in elementary schools. The data collection technique involves distributing questionnaires through Google Forms to gather information on teachers' utilization of technology or the web in the literacy learning process.

4 Result

The use of technology in literacy learning has become a necessity during the pandemic, as literacy skills are crucial in enabling learners to select and analyze critical information and apply it to decision-making in their lives. The utilization of technology by teachers is presented in **Table 1**.

Table 1. Use of Technology by Teachers.

No	Statement	Ever been	Never
1	Have attended training on the use of technology in learning	41 (74.55%)	14 (25.45%)
2	Have taught in class using technology	51 (92.73%)	4 (7.27%)
3	Have you ever done the development of learning media using a blog/web?	12 (21.82%)	43 (78.18%)
4	Have developed learning media with technology other than Blog/Web	26 (47.27%)	29 (52.72%)
5	Difficulty in developing their own online learning media	41 (74.55%)	14 (25.45%)
6	Difficulty in teaching using technology online	36 (65.45%)	19 (34.55%)
Amount		207	123

According to **Table 1**, 74.55% of teachers have attended training on the use of learning technology, and as a result, 92.73% of them have started implementing technology-enhanced learning in schools. During the pandemic, teachers have been compelled to rely on learning technology and develop interactive learning media. However, the reality in the field is that teachers still lack proficiency in technology, with only 47.27% being able to create web media or blogs for the learning process. About 74.55% of teachers find it difficult to create online learning media and 65.45% face challenges in teaching online. The connection between literacy learning and technology utilization will be discussed in **Table 2**, which focuses on teachers' understanding of literacy.

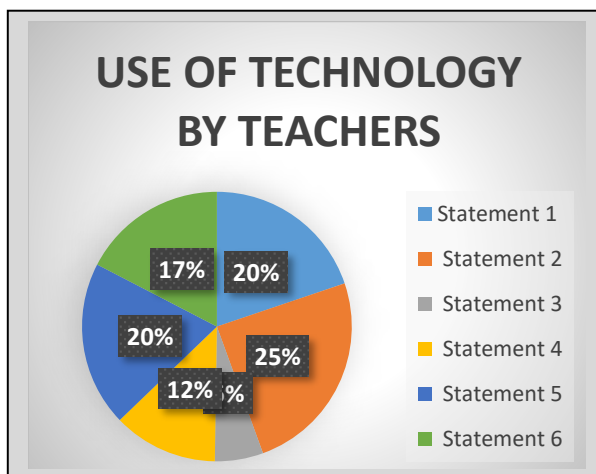


Fig. 1. Use of Technology by Teachers.

Figure 1 illustrates that teachers are primarily accustomed to using cell phones as learning tools. This daily experience enables them to share materials and assignments through social media. However, teachers' ability to use the web as a learning media tool is limited.

Elementary school education is fundamental for achieving the goals of national education and plays a vital role in shaping the learning process at higher levels. Therefore, education at the elementary school level must be executed effectively.

Learning technology emerged from educational practice and the audio-visual communication movement. Initially, it was perceived as equipment technology involving the use of tools, media, and methods to achieve educational goals, specifically teaching with audio-visual aids. Learning technology combines three mutually influential streams: media in education, learning psychology, and a systems approach in education.

Table 2. Implementation of Literature in Class.

No	Statement	Once	Never	Never
1	Have you ever carried out reading literacy lessons in class?	50 (90.9%)	5 (9.1%)	0
2	Do you already have a literacy activity program in class?	38 (69.1%)	17 (30.9%)	0
3	Do you know about literacy which was proclaimed by the ministry as a substitute for the national exam?	34 (61.8%)	20 (36.36%)	1 (1.8%)
4	Have you ever measured students' reading literacy skills?	35 (63.6%)	19 (34.5%)	1 (1.8%)
5	Do you know the test instrument for students' reading literacy skills?	27 (49.1%)	26 (47.3%)	2 (3.6%)
6	Have you ever developed a student reading literacy test instrument?	16 (29.1%)	37 (67.3%)	2 (3.6%)
7	Have you ever measured your reading literacy skills online/using a blog?	7 (1.3%)	46 (83.6%)	2 (3.6%)
8	How do students respond to learning reading literacy in class?	40 (72.7%)	14 (25.5%)	1 (1.8%)
9	Have your students ever experienced problems in learning reading literacy?	43 (78.2%)	11 (20%)	1 (1.8%)
10	Have you ever had problems knowing students' reading literacy skills?	45 (81.8%)	9 (16.4%)	1 (1.8%)

Referring to **Table 2**, 90.9% of teachers have implemented literacy learning in the classroom, while 9.1% have not. Regarding literacy activities, 69.1% have incorporated them into the classroom, while 30.9% have not. As for the government's literacy program as a substitute for national exams, 61.8% are aware of it, 36.36% are unaware, and 1.8% have no information. Regarding the assessment of students' literacy skills, 63.6% of teachers have implemented it.

After conducting a survey, it was found that only 1.3% of teachers utilized web-based technology in literacy learning, while 83.6% had never used it. Furthermore, 3.6% were unsure about using it, indicating a lack of web-based technology adoption among teachers due to age-related constraints and limited IT expertise.

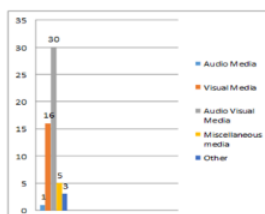


Fig. 2. Frequently used learning media.

Figure 2 provides an overview of the learning media used by elementary school teachers. It highlights the frequent use of audio-visual media, such as films and YouTube videos. Learning technology encompasses theories and practices related to the design, development, utilization, management, and evaluation of learning processes and resources.

Considering the definitions mentioned earlier, it is evident that learning technology has undergone a transformative process over time. It has evolved from being viewed as a tool to becoming a broader system, transitioning from practice-oriented approaches to encompassing theory and practice. Learning technology has shifted from focusing solely on products to embracing processes and products. Throughout its evolutionary journey, learning technology has established itself as a field and a profession.

With the rapid advancement of science and technology, particularly in the realms of education, psychology, and communication, it is plausible that learning technology will continue to develop and solidify as a scientific discipline and profession. This progress will further contribute to achieving effective and efficient learning.

However, it must be acknowledged that the development of learning technology as a field and profession in Indonesia has yet to reach its full potential, particularly in terms of design, development, utilization, management, and evaluation. Thus, concerted efforts are necessary from all stakeholders involved in learning technology, including academics, researchers, and practitioners.

Utilization, which refers to the application of learning processes and resources, holds immense importance. It focuses on the relationship between learners and the learning material or system. Individuals involved in utilization have the responsibility to match learners with specific materials and activities, prepare learners to interact with the chosen materials and activities, provide guidance throughout the learning process, assess learners' outcomes, and incorporate them into sustainable organizational procedures.

5 Conclusion

This study concludes that teachers have utilized technology, particularly web-based resources, as references or student referrals in literacy learning. Teachers have also not

encountered difficulties in teaching students how to use technology. However, when it comes to developing their web-based learning applications, teachers still face significant challenges due to the required specific skills and the integration of technology in measuring students' literacy skills. These difficulties often arise from factors such as the age of the teachers.

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