



Elementary School Teachers' Readiness in Teaching Technology-based Literacy

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ABSTRAK

Kurikulum merdeka mewajibkan guru untuk memiliki kemampuan menggunakan teknologi dalam proses pembelajaran dan meningkatkan kemampuan literasi siswa. Namun, masih banyak guru yang mengalami kendala dalam menggunakan teknologi dan meningkatkan literasi siswa tersebut. Untuk itu, penelitian ini bertujuan untuk mengidentifikasi pengaruh pelatihan multimodal untuk meningkatkan kesiapan guru melaksanakan pembelajaran literasi berbasis teknologi. Penelitian ini merupakan penelitian mixed method dengan desain concurrent triangulation yang melibatkan 24 orang guru bahasa Inggris. Metode pengumpulan data melalui kuisioner, wawancara dan observasi. Data dianalisis secara kuantitatif dan kualitatif. Penelitian ini menemukan bahwa kesiapan guru dalam pelaksanaan pembelajaran literasi berbasis teknologi meningkat signifikan setelah dilaksanakan pelatihan multimodal. Hasil tersebut didukung data kualitatif yang menunjukkan bahwa guru merasa lebih siap untuk mengajar literasi dalam bahasa Inggris. Penelitian ini juga menemukan bahwa guru-guru juga memiliki persepsi positif terhadap implementasi pelatihan multimodal. Dapat disimpulkan bahwa pelatihan multimodal berpengaruh positif terhadap kesiapan guru dalam melaksanakan pembelajaran literasi bahasa Inggris berbasis teknologi. Sehingga, pelaksanaan pelatihan multimodal dapat dijadikan sebagai salah satu solusi untuk memecahkan permasalahan guru dalam melaksanakan pembelajaran menggunakan teknologi dan meningkatkan literasi siswa.

ABSTRACT

The Independent Curriculum requires teachers to have the ability to use technology in the learning process and improve students' literacy skills. However, there are still many teachers who experience difficulties in using technology and increasing student literacy. For this reason, this study aims to identify the effect of multimodal training on increasing teacher readiness to implement technology-based literacy learning. This research is a mixed-method study with a concurrent triangulation design involving 24 English teachers. Methods of data collection through questionnaires, interviews and observation. Data were analyzed quantitatively and qualitatively. This study found that teacher readiness in implementing technology-based literacy learning increased significantly after multimodal training. These results are supported by qualitative data showing that teachers feel better prepared to teach literacy in English. This study also found that teachers positively perceive multimodal training. It can be concluded that multimodal training positively affects teacher readiness in implementing technology-based English literacy learning. Thus, implementing multimodal training can be used as a solution to solve teacher problems in conducting the teaching and learning process using technology and increasing student literacy.

1. INTRODUCTION

Elementary school teachers must have adequate knowledge and skills about 21st Century Education, which includes three primary skills: life and career skills, learning and innovation skills, and literacy, media, and technology skills (Partnership for 21st Century Skills) to produce the 2045 golden generation. These three skills must be introduced to students from an early age to be ready to survive and live in the era of the 21st century (Gunn et al., 2006; Makaramani, 2015; Weadman et al., 2023). Therefore, these three skills must underlie the implementation of learning in schools, including elementary schools. 21st-century learning aims to equip each student with learning competencies and develop their skills to be independent, active, take the initiative, and become problem solvers and risk-takers, which requires teachers to shift their role as facilitators, which is different from traditional teachers (Mawas & Muntean, 2018; Zubaidah, 2016).

The demand for a golden generation to be born in 2045 based on 21st-century education affirms beliefs about the importance of English for every Indonesian to live in the twenty-first century. Globalization

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is unstoppable due to the increasing importance of technology and its rapid development, and pupils must master English as an international language to survive in this century (Chien et al., 2020; Tauchid et al., 2022). This demand emphasizes the importance of the teacher's role in introducing English following the needs of the twenty-first century, students' development, and the students' environmental circumstances. There is a significant gap between teachers' opinions of their readiness and the outcome of school implementation observations (Lestari et al., 2020; Padmadewi et al., 2020; Rahmayanti et al., 2020). Teachers feel confident and have mastered 21st-Century skills, but in implementation in the classroom, most teachers are not ready to implement 21st-century skills in English literacy learning (Almazroa & Alotaibi, 2023; Balqis et al., 2020). The role of the teacher is significant. Therefore, development and training to improve teacher professionalism substantially impact the output intended for pupils (Rusdin, 2018; Tuzlukova et al., 2018; Warner & Kaur, 2017).

Learning English must be done regularly, and literacy must be introduced so that reading habits can be created and literacy skills can be developed. The literacy level significantly influences each learner's academic failure or success (Hasanah & Sholihah, 2017; Kalinowski et al., 2019; Zolfaghari & Ahmadi, 2016). The success of primary English literacy programs in elementary schools requires a high level of commitment and hard work from teachers to develop more accessible materials and to provide interactive learning tasks or experiences both inside and outside the classroom, to develop a reading habit and culture, and to form partnerships with parents and other stakeholders (Arditami et al., 2019; Arisandi et al., 2018).

Systemically, teacher programs that prepare English language learning competencies for children are not explicitly given in universities' curricula, especially for educational universities in Bali. However, this program is designed to prepare teachers for teaching young learners in some countries. Observations of instructors at elementary schools in Buleleng Regency reveal that most of them graduated from a four-year English Language Education program with no coursework on teaching English to young learners. Aside from that, most of them have simply completed a diploma in English. Teacher readiness must be improved in carrying out meaningful online and offline learning and regulating the learning implementation system so that the relationship between students and teachers/schools is maintained effectively to ensure effective learning and optimal educational quality and maintain mental health.

Some researchers in Bali have conducted studies on the teachers' readiness to apply technology-based instruction and promote literacy skills as a part of 21st-century skills. Other research found that the primary teachers perceived that they were ready to promote the 21st Century skills, including technology and literacy, in their classes (Padmadewi et al., 2020). However, they did not show readiness in the real teaching and learning process. A similar result that the elementary school teachers at SDK Marsudirini Negara School in Jembrana Regency (Lestari et al., 2020). The teachers stated they are ready to insert 21st-century skills into their instruction. However, based on the result of the observation, literacy skills were not fully integrated into their instruction. Besides, the primary school English teachers in Denpasar also did not integrate 21st-century skills in their instruction, even though they believed that they are ready to conduct teaching and learning processes with the insertion of the 21st-century skills that include technology and literacy skills (Rahmayanti et al., 2020). Considering the results of those studies, it can be understood that those studies were limited to identifying the level of the teachers' readiness. Besides, the results of the previous studies also indicated that most teachers still had problems integrating technology and literacy skills in their instruction. Considering the problems above, this study aims to examine whether teachers' readiness to carry out English literacy learning can be improved by providing multimodal training and how teachers think about the usefulness of the training that has been followed. The novelty of this study lies in the use of multimodal training since no study has been conducted to improve teachers' readiness to apply technology-based literacy learning through that training.

2. METHOD

This study is a mixed-method study that used a concurrent triangulation design. The quantitative and qualitative data in this study were collected simultaneously, and the qualitative data were used to confirm the quantitative data. The participants in the study were 24 English teachers from 24 schools in North Bali. The schools have English in their curriculum as local content. The teachers are mostly those who finished their 4-year programs of English Education at university but have no previous knowledge and skills in using technology. Six of them only had a one-year program for English Education Diploma but had experience teaching English for more than ten years. Purposive sampling was used to select the research participants, who must be currently teaching English in elementary schools. The research focuses on teachers' readiness to teach literacy and their perceptions of the benefits of the training. The data collection procedure, which included multimodal training through professional development in learning English literacy showed in Table 1.

Table 1. Stages of Implementing English Literacy Learning Training

Sessions of the training	Activities	Method
Preparation	<ol style="list-style-type: none"> 1. Develop work programs and job descriptions for team members. 2. Developing training materials. 3. Development of instruments to measure the success of the program. 4. Determination of the program implementing team following their expertise. 5. Discussion/debriefing of the team in terms of technical implementation. 	Online Workshop
Training Sessions		
1. Orientation about Literacy	<ol style="list-style-type: none"> 1. The concept of basic literacy in learning English. 2. Strategies to empower students to learn literacy and form characters like reading. 	Online Seminar
2. Literacy learning strategies with technology.	<ol style="list-style-type: none"> 2. <i>Blended learning</i> <ol style="list-style-type: none"> 2.1. Kahoot is an online and synchronous English learning technique that encourages students' interaction and engagement. 2.2. Wordwall – interactive online media in asynchronous English learning. 2.3. Use of a Google Form for an online test. 	Online Seminar and discussion Workshop and simulation
3. Program and strategy of parent involvement in literacy learning	<ol style="list-style-type: none"> 1. Program <i>reading log</i> and <i>shared reading</i>. 	Workshop and simulation Seminar and discussion/simulation
Implementation and consultation	Mentoring and monitoring	Conducted online via WhatsApp group
Coaching Session	To ensure the program runs well, each activity will be followed with mentorship and coaching to ensure participants can complete the tasks.	Conducted online via WhatsApp group

As shown in [Table 1](#), professional development activities in training are carried out in stages using multi modes of training and end with mentoring. The evaluation design used to determine whether or not activities were implemented successfully showed in [Table 2](#).

Table 2. The Summary Of Evaluation Stages Conducted During The Training Sessions

Evaluation stages	Description	Method
Observing the training sessions.	Monitoring the activities/sessions	Online Direct observations
Assessing the participants' products.	Assessing the participants' products	Performance assessments
Providing a questionnaire for self-assessment to determine the teachers' perception of the training attended.	Self-assess on their increased readiness	Using questionnaire

The quantitative data were collected using a five-Likert scale questionnaire. The quantitative data were used to identify the teacher's readiness to carry out technology-based literacy learning before and after the multimodal training. The questionnaire was developed using readiness theory by [Dalton & Gottlieb \(2003\)](#), who explained that readiness relates to effort, willingness, and capacity to learn new skills or behaviours. Based on that theory, the teachers' readiness was measured based on three aspects teacher's effort, willingness, and capacity to learn how to carry out technology-based literacy. The blueprint of the questionnaire is shown in [Table 3](#).

Table 3. The Blueprint of the Questionnaire

Aspect	Indicator	Item
Effort	Join specific courses to improve ICT skills to support literacy learning	1
	Buy books on educational technology to support literacy learning	2
	Buy electronic tools to support educational technology implementation to support literacy learning	3
	Watch the tutorial video to implement educational technology to support literacy learning	4
	Learn to use specific educational technology tools or applications to support literacy learning from peer teachers	5
Willingness	Spend extra time to join specific courses to improve ICT skills to support literacy learning	6
	Spend the extra money to buy books on educational technology to support literacy learning	7
	Spend the extra money to buy electronic tools to support educational technology implementation to support literacy learning	8
	Spend extra time to watch tutorial videos to implement educational technology to support literacy learning	9
	Spend extra time to learn to use specific educational technology tools or applications to support literacy learning from peer teachers	10
Capacity	Able to produce more ICT-based media for literacy learning	11
	Able to use various educational technology tools to produce media for literacy learning	12
	Able to involve more students to apply the ICT-based media for literacy learning	13
	Able to solve more problems related to the use of educational technology tools to produce media for literacy learning	14
	Able to minimize the cost of producing and implementing ICT-based media for literacy learning	15

Adapted from [Dalton & Gottlieb \(Dalton & Gottlieb, 2003\)](#)

To collect the qualitative data that aimed to identify the improvement of the teacher readiness to apply technology-based literacy learning during and after the teachers got multimodal training. In addition, the researchers also collected quantitative data to describe the teacher's perception of the multimodal training using four Likert scale questionnaires.

The results of the questionnaire that was used to identify the teacher readiness to carry out technology-based literacy learning before and after the multimodal training was conducted were analyzed using paired t-test. Before the data were analyzed using paired t-test, those data were tested using normality and homogeneity tests to ensure that the data were distributed normally and homogeny. The results of the observations and interviews were analyzed qualitatively using an interactive data analysis model that consisted of three steps data reduction, data display, and conclusion drawing/verification ([Miles et al., 2014](#)). While the results of the questionnaire data to describe the teacher's perception of the multimodal training were analyzed using descriptive statistics. In addition, the questionnaire result was also classified using the classification interval by following the Theoretical Ideal Reference Assessment Criteria ([Nurkencana & Sunartana, 1992](#)), as shown in [Table 4](#).

Table 4. The Theoretical Ideal Reference Assessment Criteria

No	Interval	Category
1	$(MI + 1.5 SDI) < X$	Very Positive (VP)
2	$(MI + 0.5 SDI) \leq X < (MI + 1.5 SDI)$	Positive (P)
3	$(MI - 0.5 SDI) \leq X < (MI + 0.5 SDI)$	Somewhat positive (SP)
4	$(MI - 1.5 SDI) \leq X < (MI - 0.5 SDI)$	Negative (N)
5	$X < (MI - 1.5 SDI)$	Very Negative (VN)

Note: $MI = \frac{1}{2}$ (ideal maximum score + ideal minimum score); $SDI = \frac{1}{6}$ (ideal maximum score - ideal minimum score).

3. RESULT AND DISCUSSION

Result

Following the objectives of the study, this section provides three major findings. First, it explains the questionnaire results identifying teachers' readiness to carry out technology-based literacy learning before and after the multimodal training. Second, it explains the results of the observations and interviews that describe the improvement of teachers' readiness to carry out technology-based literacy learning. Third, it also explains the teachers' perceptions of multimodal training. First, Teachers' Readiness to Carry Out Technology-based Literacy Learning. To identify the teachers' readiness to carry out technology-based literacy learning, the researchers delivered five Likert scale questionnaires to the teachers. The questionnaire consisted of 15 items. The descriptive statistics analysis results of the questionnaire data show that teachers' readiness increased after they got the multimodal training showed in Table 5. It can be seen from the mean scores of teachers' readiness before and after they got multimodal training. The mean score was higher after they got the multimodal training.

Table 5. The Descriptive Statistics Analysis Results of the Questionnaire

Statistic	Before	After
Mean	42.6667	50.1250
Median	41.0000	49.5000
Variance	29.275	26.375
Std. Deviation	5.41067	5.13566
Minimum	33.00	43.00
Maximum	53.00	63.00

To ensure that the teachers' readiness improvement was significant, the researchers continued the analysis by using paired-test. Before conducting that analysis, the researchers did the prerequisite normality and homogeneity tests. This study conducted the normality test using Kolmogorov-Smirnov and Shapiro-Wilk formulas. Using those formulas, the data were considered normally distributed when the Sig. scores of those two formulas were > 0.05 (Pallant, 2011). Based on the results of the normality and homogeneity tests, it was found that the data were normally distributed. It is because of the Sig. score of Kolmogorov-Smirnov was $0.10 > 0.05$, and Shapiro-Wilk was $0.59 > 0.05$ for the questionnaire data before the multimodal training. Besides, the Sig. scores of Kolmogorov-Smirnov and Shapiro-Wilk for the questionnaire data after the multimodal training were also higher than 0.05. The Sig. score of Kolmogorov-Smirnov was $0.20 > 0.05$ and the Sig. score of Shapiro-Wilk was $0.11 > 0.05$. Furthermore, the homogeneity test in this study was conducted using the Levene statistic. The data is considered homogeneity when the Sig. score of the Levene statistics is higher than 0.05 (Pallant, 2011). Based on the Levene statistic result, the Sig. score > 0.05 . Thus, it can be said that the data were homogeneity.

After the data had been proven to be normally distributed and homogeneity, the researchers continued the analysis using paired t-test. From the result of the paired t-test, it was found that the teachers' readiness to implement technology-based literacy learning increased significantly. It can be seen from the Sig. score of the paired t-test was $0.00 < 0.05$. When the Sig. score is lower than 0.05, it indicates that the results of the pre-test and post-test are significantly different (Pallant, 2011). The researchers used the eta squared formula to determine the effect size of the multimodal training on the teachers' readiness to apply technology-based literacy learning. This eta-squared formula determines the treatment's effect size when no control group is involved (Pallant, 2011). The effect size of the treatment is considered as large if the eta square score is higher than 0.8 (Cohen, 1998). Based on the calculation using the eta square formula, it was found that the score was 0.91. Thus, it can be said that multimodal training has a large effect on the teachers' readiness to carry out digital-based literacy learning.

Second, results of the Interviews and Observation on the Improvement of Teacher Readiness in Carrying Out Literacy Learning. The training results can be analyzed from various angles, including paying attention to participants' performance during the training, interviewing participants, and observing work produced after the training. The suggested blended learning system can combine several synchronous and asynchronous learning systems. The training ran smoothly, and participants were able to follow the training well. The following is a brief description of the results of the training.

The effectiveness of this training is because the training is carried out using an information delivery system conducted in various ways, namely using simple language so that it is not difficult for participants to follow the flow of ideas conveyed, using practical PowerPoint media accompanied by clear activity steps and simple examples; followed by demonstration and simulation exercises so that participants may instantly practice and identify problems so that they can directly consult them; and assistance and coaching

was offered for a week via a WhatsApp group so that the engagement process could be carried out smoothly and the ease of communication could be maintained.

The process of delivering information during the training was well conducted, the quality of the power points used was also easy to understand and could be seen clearly. The implementation of the activities was carried out in several stages, namely: providing orientation on literacy, its benefits and implementation; using the Word wall application in literacy learning, which was carried out asynchronously; using the Kahoot application, which was carried out synchronously; and using Google Form (google formula) in making assessment items. The information delivery procedure went smoothly, and participants showed an increased understanding of literacy concepts. This can be explained in the following explanation.

Third, *increasing participants' knowledge of literacy, its benefits, and how to put it into practice*. Observing the question and response method used during the training revealed an increase in participants' understanding. Understanding literacy entails knowledge of the subject and how it is applied. This topic reinforces participants' learning by providing an orientation to the accurate concept of literacy and how to use it in the classroom. The steps of this habituation activity were carried out through several activities, including: 1) *Conditioning*. This is critical because it tries to offer students and the school information about the value of literacy and instil an understanding of the importance of literacy for life, rather than only for the sake of getting good grades or scores. Therefore, this needs to be taken seriously. 2) *Routine activities*. Literacy in diverse activities that are varied and customized to the characteristics of the students being taught must be planned to make literacy activities a part of student life. Reading and writing activities to build literacy skills must be provided to students in a well-programmed and consistent manner. This necessitates the decision-maker's commitment and support. 3) *Spontaneous activities*. This activity of spontaneity implies that reading activities must be incorporated into students' lives in the classroom/school or at home. For example, creating a literacy area in the school and at home to read newspapers/magazines/stories with friends or parents when they are at home. 4) *Modelling or leading by example*. 5) *Modelling and presenting direct examples* are the most effective ways to develop literacy in students. Teachers and parents present real-world examples of reading activities that pupils can copy. 6) *Scheduled activities*. Literacy habits must be regarded seriously. Thus they must be adequately designed and formally supported by decision-makers (principals and parents at home). The sessions also mentioned four factors that can be used as principles in implementing literacy learning: Seriousness, Commitment, Consistency, and Consequences. Because literacy learning must be successful for the nation's future generations, these four factors must be employed as guidelines for implementing literacy learning.

Fourth, *ability to use the Word Wall application for teaching English literacy*. Word Wall is a website-based application that can create learning media such as quizzes, matchmaking, pairing, anagrams, word scramble, word search, grouping, etc. This website can be accessed via wordwall.net. Users can provide access to the media they have created online, which can also be downloaded and printed on paper. This application provides 18 templates that can be accessed for free, and users can change activity templates from one activity to another easily. Teachers can also make their content as assignments ([Hidayaty et al., 2022](#); [Purwitasari, 2022](#)).

Based on the results of observations during the training and referring to the question and answer process carried out with the participants, it can be stated that they have never been familiar with this application before, so when the training was finished, all the teachers stated that they were delighted because they understood how to use Word Wall to develop technology-based media. Photo evidence of media with word walls made during the training shows the teacher's skills in making media with word walls made by participants.

The training on the use of the Word wall was carried out in stages consisting of direct orientation, demonstration with examples, hands-on practice, and a week of mentorship. The detailed and serious delivery process allows participants to understand this topic well and develop online-based literacy media. The training process is broken down into sections to provide understanding more quickly, with clear demonstrations and examples. As a result, participants can easily develop a game, as demonstrated in [Figure 1](#) and [Figure 2](#). Based on the samples of the participants' work previously shown, it can be concluded that they have a solid understanding of creating media using Word Walls.

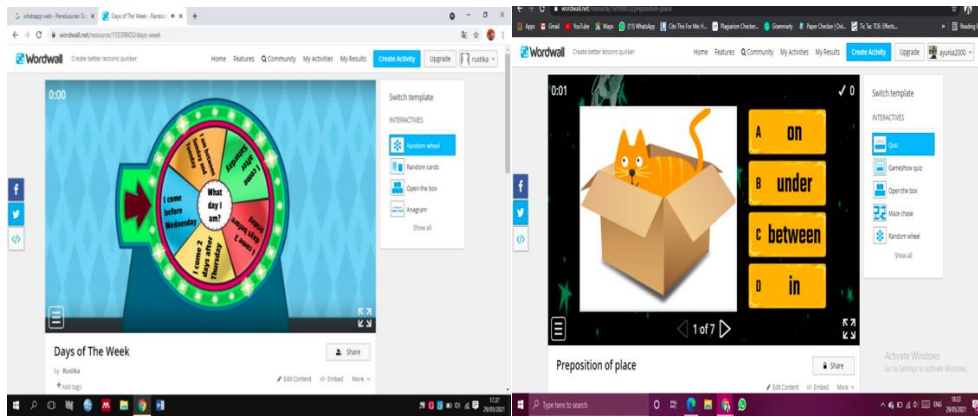


Figure 1. Example of a Word Wall Made by Participants

Some other examples of interesting Word wall media can be shown as follows.

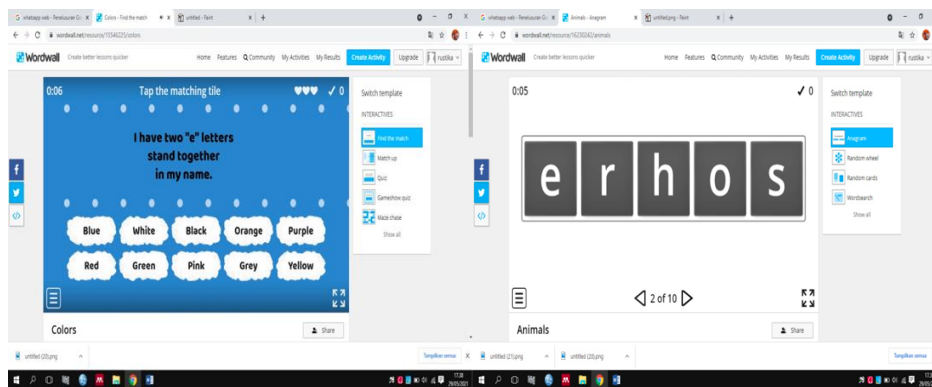


Figure 2. Other Examples Made by the Participants

Fifth, participants' Understanding of Interactive Media Development Using Kahoot for Teaching English Literacy. Another program designed for primary school instructors is Kahoot! Kahoot is one of the most popular platforms, and it can make students more interested after participating in the event. Participants can be challenged to answer questions from online quizzes submitted by the committee or teacher using Kahoot! (<https://kahoot.com/>). Usually, the organizers can display the questions on their laptops, and the participants can respond using their smartphones. Participants who answer correctly the fastest will get the highest score. Later the score obtained by the second correct answerer or so will continue to decrease along with the order of the speed of answering. Usually, there will be many questions for participants to answer, and the score will be accumulated in the end. The participant with the highest score will be the winner. In addition, the three people who have the highest score will occupy the podium.

Kahoot! is a game-based learning platform in schools and other educational institutions. Because it can be done interactively, this platform is particularly appealing for learning and enjoyment (Cortés-Pérez et al., 2023; Jones et al., 2019; Kalleny, 2020; Licorish et al., 2018). It was also discovered that the participants in this training were satisfied and could immediately utilize Kahoot during the session. They must present the outcomes of the media they have been given. The participants' work has a tangible performance that they can use Kahoot in their classrooms.

Sixth, teacher's understanding of how to use Google Forms. Google Form, sometimes known as Google Forms, is a Google tool for administrative tasks integrated into the Google Drive program. This tool is free and simple to use; all users need is a Google account to instantly build Google forms. Google Forms may be used to construct various online forms, including questionnaires, tests, attendance, voting, etc. Users will immediately receive a copy of the summary response in a spreadsheet file that they can download and print. Understanding of making Google Forms is also well understood because participants can use this application facility to make tests and quizzes. All participants felt very enthusiastic and enjoyed it. Based on the simulation and observations made throughout the sessions, it can be concluded that the participants' understanding has improved, and they admit that they can use this knowledge to create questions for the classes they teach. They also confirm that they can employ a mixed teaching method, which blends

synchronous and asynchronous learning with media, depending on the context and conditions of their particular schools.

Seventh, participants' opinions about the literacy teaching training they attended. All participants generally agreed that the training they received was valuable to them. They admitted that the training they received was necessary for mastering literacy and teaching English literacy. In addition to personally inquiring and observing the participants' attitudes and activities during the training, their feedback was gathered using a questionnaire. The questionnaire consisted of 13 items and was on four Likert scale. The findings of the collected questionnaires are shown in Table 6.

Table 6. Teachers' Perceptions of the Literacy Training They Received

Statistic	Score
Mean	51.2083
Median	51.5000
Mode	52.00
Std. Deviation	.88363
Variance	.781
Range	2.00
Minimum	50.00
Maximum	52.00

From the data shown in Table 6, it can be seen that the mean score was 51.2. Based on the category interval in Table 6, when the score is more than 42, it is categorized as very positive. Thus, since $51.2 > 42$, it means that the teachers have a very positive perception of multimodal training. Besides, from the data in Table 6, it can be said that all of the teachers have very positive perceptions because the minimum score was $50 > 42$. The result of the questionnaire showed in Figure 3.

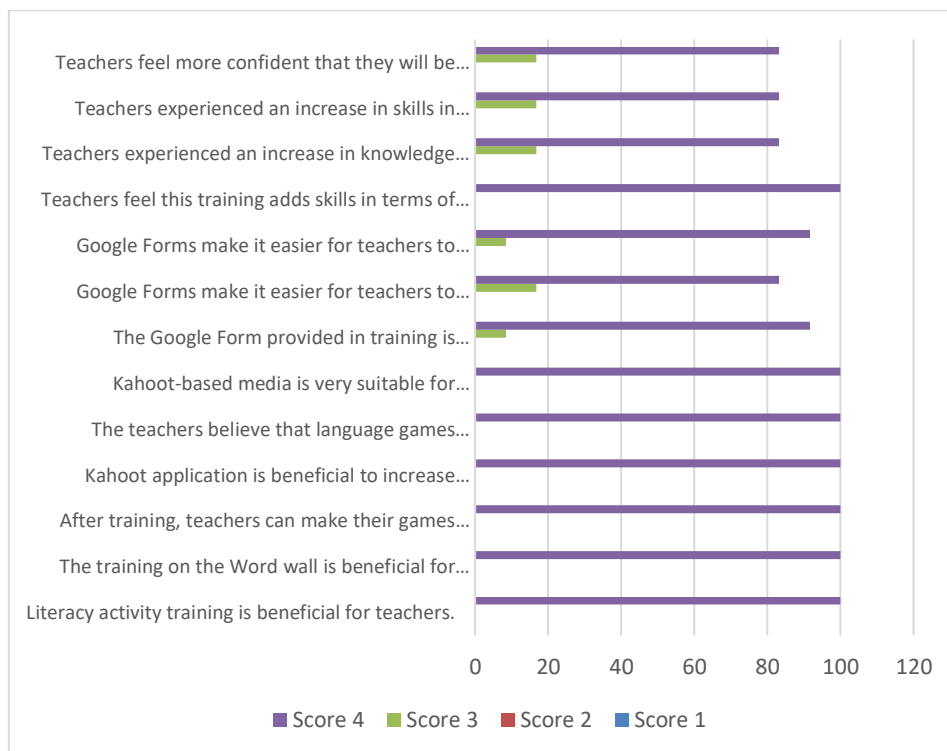


Figure 3. The Result of the Questionnaire

Participants also mentioned that the online training, which included demonstrations and examples, substantially aided their comprehension of teaching literacy using a blended system. The results of interviews and questions and answers during the sessions stated that the topics given were applicable and appropriate for the classes they taught. Material can be selected, and content can be customized. In the interview, it was also revealed that the anticipated problem faced by teachers was facility support because the existing teachers did not have adequate facilities and only had old cell phones. This is considered to

impede their ability to develop media. This problem, however, can be handled by encouraging teachers to work in groups with other teachers and referring to the rules provided during the training.

Discussion

Readiness relates to effort, willingness, and capacity to learn new skills or behaviours (Dalton & Gottlieb, 2003; Looock et al., 2022). Readiness is the stage to make some changes and the willingness to act better, which is indicated by real action (Hunter et al., 2022; Padmadewi et al., 2020). The training that teachers attended was stated to be able to increase their readiness in literacy learning because of an actual change in their ability from not being able to make technology-based media in literacy learning to being competent and able to do it. The training that the elementary school teachers attended not only boosted their willingness to use technology but also enhanced their pedagogical skills because they learnt about literacy teaching practices during the sessions. This is in compliance with Government Regulation Number 19 of 2005 on National Education Standards that there are four essential competencies, namely pedagogical, personal, social and professional competencies, required by all teachers (Hakim, 2015; Taniredja & Abduh, 2016; Wardoyo et al., 2020).

As part of their professional development, teachers benefit greatly from this training. Professional experience is critical in developing teacher competency (Loo et al., 2019). In the case of the teacher participants, the training provided was extremely beneficial to their development as teachers. Every teacher is required to have 21st-century capabilities, especially in 21st-century education. The necessary skills in 21st-century education include life and career skills, learning and innovation, and media, information, and technology skills (Karaca-Atik et al., 2023; Trilling & Fadel, 2009). Teachers' capabilities in using media and technology, learning, and creating are bolstered as a result of this training, allowing them to apply these abilities to their students. The 21st century is the age of knowledge (Mukhadis, 2013; Valtonen et al., 2021), so the teacher, as one of the learning resources for students, must have the skills to be able to use their skills to learn and develop themselves to be better prepared to teach students. The training attended by teachers provides an opportunity for them to explore the development of literacy learning. Training using Wordwall and Kahoot allows teachers to develop their own learning media creations and adapt them to the topics taught so that students can learn to use technology, be interesting and work in a play environment.

In addition to learning how to use Wordwall and Kahoot for literacy instruction, the teachers use Google Forms to conduct the online assessment. The importance of assessment cannot be overstated. It is a crucial constructive learning process (Baranovskaya & Shaforostova, 2017; Schildkamp et al., 2020). Assessment is also crucial in revealing students' capacity to attain learning objectives (Padmadewi et al., 2017; Ratminingsih, 2017). The assessment aims to analyze the effectiveness of learning activities, curriculum, and student abilities during and after the teaching and learning process. Recognizing the importance of assessment, the teacher's preparation to carry out assessments is also a priority in this training. They are taught how to create assessment instrument items using Google Forms to be administered online. Teachers' understanding and skills in utilizing Google Forms to make assessments can be improved with assistance and coaching during training. The multimodal training, including several modes of activities, guides the teachers to improve their teaching skills in transferring knowledge and how to maintain students' engagement, keep students' interactions, and involve parents in taking the role of a couch of at-home learning.

Teacher readiness improves due to engaging in this training since the teacher participants are provided with a week of assistance and coaching. However, it is conducted entirely online via a WhatsApp group. Teachers are free to raise questions on media literacy and media development training. Because every difficulty is instantly solved by the resource persons/mentors in the WhatsApp group, this mentorship process is significant in making this media. Mentors play a significant role in guiding and supporting teacher preparation and professional growth through the practicum process (Agudo, 2016; Constantinescu, 2015; Mcilongo & Strydom, 2021).

Teachers' readiness in the literacy teaching process also includes an orientation to incorporating parents in literacy learning, particularly in forming reading habits. The involvement of parents plays a vital role in the success of student learning (Alharthi, 2023; Rousoulioti et al., 2022; Wang et al., 2023), especially when it comes to gaining English literacy (Mak et al., 2023; Padmadewi et al., 2018). As a result, teachers are encouraged to employ parental involvement in learning English literacy in schools, particularly for elementary school students who still require parental guidance and supervision.

Since this study has proven that multimodal training could improve teachers' readiness to conduct technology-based literacy learning, it means that multimodal training should be done regularly to ensure that the teachers always update their skills and knowledge in using technology for literacy learning. This study is limited to analyzing the improvement in teacher readiness assessed from the evidence of their performance during training and mentoring. Due to the limited research time available, this study did not

analyze the skills of teachers in implementing their evidence in the classroom. Therefore, it is recommended to conduct further research to see the future implementation of technology-based media in literacy learning using more study samples and a larger population.

4. CONCLUSION

Based on the results of data analysis and the results previously presented, this study concludes that teachers' readiness to apply technology-based literacy learning in English can be strengthened and improved by providing multimodal training. This is demonstrated by an increase in teacher comprehension when Wordwall games and Kahoot are used for developing media-based instructions and when Google Forms are used to create assessments. Besides, all of the participants gave a positive perception of the multimodal training. They admitted that the training was extremely beneficial and that the material delivered was what was required. They stated that the material was suitable and usable. The short-term issue is that not all teachers have access to computers, limiting the easy creation of this online-based media. However, these issues can be addressed through group work and the use of school facilities. Given the increased understanding of all participants and considering the assessment of participants, it is recommended that the material obtained be tested in their respective schools. Participants are also encouraged to train more frequently to improve and solidify their skills in using technology for this medium of teaching literacy to their students.

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