

## Literacy-based instruction with ICT on English learning in junior high school

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### ABSTRAK

Tujuan penelitian ini untuk menyelidiki pengaruh pembelajaran berbasis literasi dengan TIK pada pembelajaran bahasa Inggris pada siswa di Sekolah Menengah Pertama. Desain metode campuran digunakan dalam penelitian ini. Temuan yang diperoleh peneliti adalah hasil pre-test yang dilaksanakan sebelum diberikan treatment dan hasil post-test yang diberikan sesudah mendapatkan treatment. Untuk menganalisis data, metode penelitian kuantitatif dan kualitatif digunakan dalam penelitian ini. Uji sampel independent t-test digunakan untuk menganalisis pengaruh signifikan terhadap pembelajaran berbasis literasi yang dibantu oleh TIK. Pre-test dan post-test pada kelompok kontrol dan eksperimen digunakan untuk mengukur perbedaan hasil nilai bahasa Inggris siswa sebelum dan sesudah diberikan perlakuan. Hasil dari analisis data tersebut menunjukkan pengaruh signifikan pada hasil pembelajaran berbasis literasi berbantuan TIK. Disimpulkan, hasil belajar bahasa Inggris siswa meningkat setelah diberikan perlakuan pembelajaran berbasis literasi dengan bantuan TIK.

### ABSTRACT

This study attempted to investigate the effect of literacy-based learning with ICT on learning English for students in junior high schools. The mix-methods were used in this study. The findings obtained by the researcher are the results of the pre-test carried out before the treatment and that of the post-test done after the treatment. In the data analysis, quantitative and qualitative research methods were employed. An independent sample t-test was used to analyze the significant effect of literacy-based learning aided by ICT. The pre-test and post-test in control and experimental groups were used to measure the differences in the results of students' English scores before and after the treatment. The results of the analysis of the data indicate a significant influence on ICT-assisted literacy-based learning outcomes. In conclusion, students' English learning outcomes increased after being given literacy-based learning treatment with the help of ICT.



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### INTRODUCTION

In general, literacy is defined as a person's ability to read and write. In the 21st century, education develops in line with rapid technological developments (Nabhan, 2021). Students' perceptions can be enhanced in varied ways, such as the advantages of reading and writing activities. Literacy-based learning helps students learn knowledge effectively (Suhendra et al., 2020). Students who can write well indicates success in learning a language. Literacy-based learning supports students' writing and reading skills (Suarmi and Fatimah, 2019). The ability of

students to organize ideas in written form can encourage their desire to learn. In addition, they also need the ability to use, apply and create information in reading and writing practices (Khairuddinayah, 2018).

The presentation of information in digital media is one of the tools for individuals to easily access information through information technology (Gündüzalp, 2021). The teacher's role is vital in education, particularly motivating students to hone their reading and writing skills. To share ideas and information is the process of conveying messages in writing. Therefore, the teacher must take the opportunity to present teaching materials that can aid students in learning, one of which is literacy-based learning. Students can gain new perspectives on subjects by reading and writing. English proficiency among young students is essential to help them prepare for the challenges of living in a global era. Learning English can help students, both orally and in writing, to understand their environment. English is one of the primary foreign languages taught in the curriculum in Indonesia. Harmer (2008) claimed that the more rapidly the acquisition process is introduced, the more effectively the language is learned. Generally, the goal of English learning is to increase the specified communicative ability, as proposed by Hymes (1972). This condition is relevant to how effectively students can communicate with others using the target language they have learned. To help students focus on the language acquired, communicative competence might be defined as the ability to carry out communicative tasks or activities properly.

In the education field, English is one of the most influential languages. In Indonesia, all media consider English to be good communication. English class is a form of teaching and learning that is an essential component of the Indonesian educational system (Mappiasse & Bin Sihes, 2014). The requirement for a defined curriculum is to understand how knowledge is acquired to achieve quality language distribution. However, there must be a means to assess what is being taught in different schools and levels to ensure that learners receive adequate knowledge. Literacy-based activities can help students extend their perspectives in a variety of ways. The teacher directs English instruction for students to acquire language skills and become creative individuals who can solve problems utilizing their English abilities. The literacy-based English learning implementation focuses on student's reading and writing skills. Environmental elements that promote learning can also have an impact. (Dewi & Widyaningrum, 2018).

English is a compulsory subject used in education in Indonesia. English is one of the priorities in education to face the era of globalization (Darmawati et al., 2020). Based on the Regulation of the Minister of Education and Culture Number 24/2016, English at the Junior High School level is primary. The implementation of literacy-based instruction when learning English, particularly for EFL students, is an essential aspect of language learning. The window of the world plays an important role in language teaching and learning, particularly in literacy tasks. As a result, literature-based learning focuses on teaching and mastering reading and writing skills. It can help foreign language classes attract students with different learning styles to practice their reading skills within the learning process. In line with Tiro (2018), the low level of educational process skills has indicated that students' competences and interests are still undeveloped in terms of knowledge. It has not been that as a learning organization that aims to make citizens lifelong learners. The process of students developing writing abilities is an indicator of academic performance and is extremely beneficial to learning. It can also be used to send written messages to others.

Teachers are obliged to design online learning activities, including developing reading skills, in light of the current COVID-19 pandemic (Norris et al., 2012). Learning activities formerly carried out manually or face-to-face have transitioned to online learning using web platforms during the pandemic. In this COVID-19 pandemic condition, the change significantly impacts the teaching and learning activities that students experience. Digital technology makes it easier for teachers to study and communicate with students during pandemics like these. Students can easily improve their literacy abilities in this digital age. This is due to Generation Z, which makes it easier for students to interact with the digital world. The teacher's role is limited to keeping students informed about current events and encouraging them to read everywhere (Tetep & Suparman, 2019).

Critical learning patterns can be improved through literacy-based learning. According to studies, the teacher's position in this situation is highly beneficial in helping students to learn properly through collaboration and interactive teaching and learning activities (Hakim et al., 2021). Literacy-based learning practices motivate students to be able to think logically and critically about information in a text. This ability is also beneficial in combining the information obtained with the knowledge they have previously understood. Critical thinking skills are also very advantageous for students to select materials in mass media and social media. So that students can be more careful in absorbing and disseminating information. This skill helps avoid

Teaching reading and writing is carried out in literacy-based learning practices. Students can learn to analyze text by reading and analyzing the contents of the text. Literacy-based learning seeks to help students learn literature through real-life literary experiences. Meanwhile learning to read with more focus on teaching grammar in a sentence or paragraph is seen as less effective. Thus, the teacher's role is needed to help students choose and study textbooks that are appropriate to their interests. As reported by Sari (2021), literacy-based learning has transformed classes from face-to-face to online learning with the help of digital platforms. These changes do not automatically run smoothly considering the old habit factor. It is understood that digital technology-based learning has enabled creative learning activities. This condition provides a new perspective on literacy activities, and practical challenges in literacy programs are starting to develop. However, before the pandemic, we were all familiar with the internet and digital literacy through various online-based activities.

A flexible learning system is necessary so that students can adapt their learning to fulfill their interests and abilities. Based on Muhdi et al. (2020), a number of factors are to consider while putting online learning into practice, including planning, determining student needs, teacher competency, support systems, material design, selecting the best platform, and monitoring the development of learning outcomes. Furthermore, another perspective stated that students, teachers, learning materials of varying quality and adaptability, the quality of the technology or platform employed, and the learning environment are all factors to consider in learning. In Indonesia, English is taught only in schools as a subject. As a result, there is extremely little time to teach this subject, both as a mandatory subject and as a cross-interest subject. Some articles report on teaching or research methods on EFL writing that integrate theoretical instruction advancements to highlight the research pedagogy of EFL writing.

The younger generation is going to use of ICT is currently attracting the attention of the education community, particularly in the wake of the Covid-19 pandemic, which has an effect on the use of ICT and digital readers (Hu & Yu, 2021). Students benefit greatly from the advent of ICT and rapid technical advancements, particularly in basic education. The use of modern learning technology has the potential to make a significant contribution to literacy learning. Using ICT, on the other hand, has a number of benefits, including providing support for students, broadening access to resources, and assisting students in learning anywhere and at any time. The information age's expectation for ICT literacy and skills to be maintained through education, training, and lifelong learning are influenced by the urgent need to develop human resources (Iftekhar & Jihye, 2016). Furthermore, the use of literacy-based learning is related to digital media, that makes it easier for each user to receive and exchange information (Fernanda et al., 2020).

Information and communication technology is now developing quickly, which has a big impact on all parts of life (Kustini et al., 2020). ICT impacts thinking, communication, and social interaction in literacy-based instruction. On the other hand, ICT's influence on the use of literacy-based education can affect the learning habits of students with daily internet access. With only one touch of the screen on a mobile device, it is now easier for students to access the most recent knowledge and online information, particularly in literacy activities that have made the transition from printed text to screen text, technology and the economy, interactions, and the media have a significant impact on literacy practices. The focus of literacy instruction needs to be modified to cover more than reading and writing abilities and also focuses on the different kinds of texts that are currently emerging. Additionally, teachers develop students' communicative skills in addition to their basic language capabilities. However, in order for children to be able to question the information they come across, critical awareness must be developed in them (Ko, 2013).

The influence of globalization and digitalization is believed to be able to influence the world of the 21<sup>st</sup> century in exploring literacy works (Apriani, 2016; Prakoso et al., 2017). It means that even more significant changes will change the face that begins with everything that has gone before. The focus shifts from core topic knowledge to 21st-century learning related to the educational paradigm in a globally connected environment. Literacy is one of the crucial skills that can be seen and used by students to develop 21<sup>st</sup>-century skills comprehensively, which is the basic concept of all learning processes (Noortyani, 2018). Physical and mental acts are variously defined as writing ideas. Physical acts include entering intermediate-level words or concepts into hieroglyphic writing via e-mail message or parchment-typed computer-type inscribe.

Khairuddinayah (2018) proposed that literacy is the basis of education. The educational process is incomplete without reading and writing. Literacy is seen as a sign of modernism and an educated person, and it is assumed to play a role in the delivery of information in the field of education. Today's daily activities are intermingled with literacy, which is sometimes referred to as purposeful. Students can understand the meaning of the text contained through the interaction between content and structure through literacy-based instruction-based learning (Dewi et al., 2020). One that determine the effectiveness of language learning is media and digital literacy (Anggeraini et al., 2019). Digital literacy is helpful for students to find the information they need. Digital skills need to be taught by teachers so students can use them appropriately.

Traditionally, students' reading and writing abilities can be seen through literacy in a language (Cahya et al., 2020). Literacy is an integral part of a process that relates to two complementary aspects: reading and writing. Based on (Laksono & Retnaningdyah, 2018), these two aspects of language skills become a basis for developing student literacy. This can be done in various ways. Therefore, the term literacy is often viewed so broadly that it has many different definitions. The application of literacy-based values in education is a primary demand for skills in the 21<sup>st</sup> century. Most people still have low statistics in terms of literacy, especially students. Therefore, it is important to improve the quality of students' writing skills through practice by using literacy-based learning in this 21<sup>st</sup> century. The role of the English language is well established today and will remain so over time. That is why English literacy is necessary for today's future. Literacy skills development can begin when foreign language teaching begins (Shin, 2015). Students can learn through meaningful exposure and practice rather than explicit instruction that focuses only on parts of the language. Knowledge of a language is about the importance of this literacy-based instruction. By mastering literacy skills, students will have better opportunities in the future.

Despite the fact that several studies have been conducted, research on literacy-based learning in the context of learning English at the junior high school level has not been widely reported. This research attempted to analyze the influence of literacy-based instruction combined with ICT in improving students' literacy skills. This research applied validity to create the design of this study. This validity was then used to measure the extent of students' literacy skills in the 21st century by giving treatment to the class. The results of these measurements were obtained using experimental methods, with the null hypothesis accepted if the  $T_{observed}$  is higher than the critical value. In reverse, the null hypothesis is rejected if the  $T_{observed}$  is smaller than the critical value. Then, this study was assisted by SPSS 21 to find the results of class comparisons to be studied. This study aimed to examine the effect of literacy-based learning on learning English. The literacy-based instruction can help improve students' reading and writing skills. Thus, teachers can use the appropriate method to teach English to students.

## **METHOD**

A descriptive qualitative design was applied in this study (Creswell, 2009). The descriptive method was used to analyze data about the effect of literacy-based teaching on English learning in a middle school in Buleleng, Bali. In data analysis the researcher used descriptive statistical analysis. The researcher gave multiple-choice questions to students to investigate the effect of literacy-based instruction, then analyzed descriptively using the SPSS 21 application. The researchers selected that place because the 9th grade students often had difficulties in learning English, especially in applying literacy-based instruction aided by ICT that was still not effective

enough to be implemented in the school. In addition, the researchers desired to examine literacy-based learning in English learning in 9<sup>th</sup> grade students in secondary school.

Cohen et al. (2020) argued that researchers should make sampling decisions early in overall research planning. Sampling arises directly from the problem of determining the population in which the research will focus on obtaining all the information. In research terminology, a population refers to a comprehensive group of individuals, institutions, objects, and so forth; with similar characteristics of interest to the researcher. The subject of this study employed the students in two classes in grade 9<sup>th</sup> students in secondary school with a total of sixty-five students. The sample consists of only sixty-five students of two classes: 9A consists of 32 students; and 9B consists of 33 students. In addition, the researchers obtained a representative sample, namely simple random sampling (lottery), where class 9A was the experimental class, and class 9B was the control class. English test was used in this study as an instrument in the pre-test and post-test. The English test contains thirty multiple-choice questions with the same questions in the pre-test and post-test. Then, the pre-test results were compared with those of the post-test or after the students received treatment. After that, the researcher analyzed the students' pre-test and post-test results using independent sample t-test analysis.

## RESULT

At this stage, the researcher gave multiple-choice tests and essays to students investigating the effect of literacy-based instruction, then analyzed descriptively using the SPSS 21 application. Independent samples t-test was used in this study. It was to analyze the significant effect on the experimental and control groups. In this study, the researcher used a t-test to analyze the data. The purpose of the independent sample t-test is to compare the mean of the two independent groups. An Independent sample t-test was used to figure out whether a statistically significant difference between the two groups existed. Thus, several prerequisite tests took place before the inferential examination, namely the normality test and the homogeneity test. This prerequisite test was conducted to determine whether the data were parametric or non-parametric.

### Normality Test

In statistics, the normality test is used to determine whether the data has been drawn by a normally distributed population. The normality test was used after determining the sample using SPSS 21. Shapiro-Wilk was used to test the normality of the data where if the significance value exceeded the value of 0.05. The results of these data can be categorized as distributed. A normality test is used to determine whether the pre-test and post-test are normally distributed. In this study, Shapiro-Wilk was used to test the normality of the data. The results of the pre-test of both group in normality test can be seen in Table 1. Table 1 shows that the significance value for the pre-test in control group was 0.206, while for the experimental group was 0.373 in Shapiro-Wilk. Barely shown Sig. (0.206) and Sig. (0.373) which are higher than 0.05. Based on these results, it can be said that the data is normally distributed. Thus, the data meets the requirements to be tested in the independent sample t-test at a later stage.

**Table 1. Result normally test of pre-test**

Group (N)	Shapiro-Wilk		
	Statistic	df	Sig.
Control Group	0.976	33	0.206
Experimental Group	0.961	32	0.373

**Table 2. Result normality test of post-test**

Group (N)	Shapiro-Wilk		
	Statistic	df	Sig.
Control Group	0.956	33	0.203
Experimental Group	0.947	32	0.119

Furthermore, it is carried out by analyzing the results of the post-test on investigating the effect of literacy-based instruction on the English learning after being given treatment to the

experimental group and the control group. In determining the normality test, the Shapiro-Wilk statistic is used to determine whether the data is normally distributed or not. The results of the normality test analysis can be seen in Table 2. Table 2 clearly shows the significant value of each group in the English course. The analysis of the results showed that the significance value of the experimental group was 0.119 and that the control group was 0.203. The data was normally distributed, that it exceeded 0.05.

### Homogeneity Test

In this study, Levene's Statistics was used to analyze the homogeneity test. A homogeneity test is conducted to determine whether the data collected is homogeneous. The variances of the groups are considered homogeneous when the significance value of the obtained data is more than 0.05. In contrast, when the significance value is less than 0.05, the result of the pre-test and post-test are considered not homogeneous. The homogeneity test criteria can be seen in Table 3.

**Table 3. Result of homogeneity test**

Score	Levene Statistic	df1	df2	Sig.
Pre-test	1.156	1	63	0.286
Post-test	0.851	1	63	0.360

Before proceeding to independent sample t-test, the results of the pre-test and post-test scores of the two groups were analyzed using the homogeneity test. To find out the results of the analysis, Levene's statistic was used to determine whether the pre-test and post-test were homogeneous. Data is homogeneous if the significance value exceeds 0.05. The result of the Levene's Statistic was 1.156 for the pre-test and 0.851 for the post-test; the significance value was 0.286 in pre-test and 0.360 in the post-test. It means that the data was homogeneous or equivalent.

### Hypothesis Testing

Hypothesis testing was used after the data was obtained to determine whether there was a significant difference in the mean scores of the two groups. The statistical hypothesis is based on the null hypothesis ( $H_0$ ) and the alternative hypothesis ( $H_a$ ). The one-sample t-test assisted by SPSS 21 was used to determine whether the pre-test and post-test scores differed significantly. The result of analyzing the pre-test and post-test can be seen in Table 4. Based on Table 4, it is evident that the data is homogeneous with a significance value of Sig. (2-tailed) of 0.026. The frequently observed value ( $T_o$ ) is -2.277 at degrees of freedom (df) 63. If the  $T_{observed}$  value is negative, the following steps are to adjust it according to df 63;  $T_{table}$  63 value is 1.669 according to the probability value of the significance level, so  $T_{observed} > T_{table}$ . Since the value of Sig (2-tailed) is more than 0.05 ( $p < 0.05$ ), the alternative hypothesis ( $H_a$ ) was accepted. It means there was a significant difference in the value of English between students taught using literacy-based instruction and those taught conventionally. Based on the results of the previous analysis, it can be concluded that there was a significant influence of literacy-based instruction on English learning in junior high school.

**Table 4. Independent sample t-test of post-test**

	Levene's Test		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Lower	Upper	
Score	Equal variances assumed	.851	.360	-2.27763		.026	-2.352	1.033	-4.416	-.288
	Equal variances not assumed			-2.27562	493	.026	-2.352	1.033	-4.419	-.286

### Effect Size

The effect size test was carried out on the possibility or symptom of the size of the two groups (Pallant, 2015). In this study, the effect size test was carried out after the t-test that was analyzed using SPSS 21. After that, Cohen's d model was employed as the effect size model (Table 5). The following criteria were used to determine whether the difference between the two groups is significant. The result of effect size calculators in terms of their Eta Squared can be seen in Table 5. This effect size was computed using the results obtained from the pre-test and post-test by calculating the results of the calculation of  $t_{\text{value}}$  and  $df$  from the independent sample t-test in Table 6.

**Table 5. Criteria of cohen's effect size (Pallant, 2015)**

Magnitude	Cohen's d
Small Effect	0.2
Medium Effect	0.5
Large Effect	0.8

**Table 6. Result of effect size**

t value	df
2.277	63
Cohen's d	Effect-size r
0.5	0.2

The result of effect size calculators in terms of its Eta Squared can be seen in Table 6 that the value after being measured by the guideline proposed by Cohen is 0.5. It is categorized at the level of medium. It means that the  $t_{\text{value}}$  and degree of freedom between the pre-test and post-test have an insignificant effect. It indicates the significant effect of the implementation of literacy-based instruction on English learning.

### DISCUSSION

This study investigated the effect of literacy-based instruction aided by ICT on English learning in 9th grades students in secondary school. It was an experimental study. This section describes the results of the study by interpreting the data analyzed by the researcher statistically from the research hypotheses presented previously. The researcher examined the data from the post-test results using descriptive and inferential statistical analysis. The pre-test was before the treatment, while the post-test was after the treatment. Based on the results of the analysis, the mean score for the experimental group was 79.27 and 79.00 for the control group. The findings from the following analysis are normality and homogeneity tests. This analysis shows the normality test in Shapiro-Wilk. The post-test results analyzed through the normality test indicated that the experimental group obtained a significance value of 0.119 and for the control group of 0.203. The next analysis was the homogeneity of variance in post-test based on the mean in Levene's Statistics producing a significance of 0.360. It indicates that the two groups were normally distributed and homogeneous because they exceeded the significance value of 0.05. The next step was to analyze the hypothesis test using independent sample t-test to measure the significant difference in the results of the two groups. The test results show that  $T_{\text{observed}} (T_o)$  was 2.277 at the degree of freedom ( $df$ ) 63. It was higher than the alpha level of 0.05. More importantly, to prove that the data were significant in the post-test, the value of Sig. (2-tailed) showed 0.026. Since it was higher than the alpha score of 0.05 ( $p < 0.5$ ), it means there was a significant difference between the students taught by literacy-based instruction and those learned conventionally. Last but not least, it was continued by analyzing the effect size that obtained a result of 0.5, which is a medium level for effect of study. The mean score and Std. deviation of the two groups are used to calculate the effect size. In conclusion, it was evident that the effect of literacy-based instruction aided by ICT on English course can have a significant effect on literacy-based instruction compared to conventional learning.

The implementation of literacy-based instruction can improve students' abilities in reading and writing skills. Literacy is defined as reading and writing skills that are closely related to language learning (Agnesia et al., 2021). As technology advances, literacy-based instruction using ICT is used to assist learning processes. Students can obtain information by exploiting existing technology through literacy-based instruction supplemented by ICT. The students are enthusiastic about experimenting with various forms of digital technology. As a result, it can be utilized as instructional material for students in the field of education, facilitating effective learning and assisting in the improvement of student learning through the use of literacy-based instruction aided by ICT.

The application of literacy-based instruction in the curriculum is decisive because it aims to acquire skills of using ICT media effectively (Anggeraini et al., 2019). In general, literacy is an awareness of an individual's attitude or ability to access, analyze, and manage information that affects the improvement of language learning (Son et al., 2017). The need for learning readiness for students to be able to achieve effective learning. In the current pandemic situation, the use of technology in learning activities is needed to facilitate communication. The media used in the implementation of literacy-based instruction are Google Classroom, WhatsApp Group, YouTube, Google Meet, and PowerPoint. Teachers can design discussion topics and send them to students using these media. This is done to encourage students to participate in discussions, reading assigned topics, and completing writing projects. These learning activities assist students develop their reading and writing skills as well as their ability to analyze a literary work.

Learning skills in the era of globalization in the context of education leads to the development of innovation to consider the long term. The learning and innovation skills referred to are the ability to think critically and solve problems (Nurtanto et al., 2020). Education can be expected to be able to develop the various potentials possessed by students. According to Barus et al. (2021), the ability to read and write is one of the parameters in showing students' academic and non-academic skills. Reading and writing are important skills that must be possessed by students to expand and increase their academic knowledge. Critical thinking skills require the ability to read and write as well as a comprehensive understanding of each reading material (Susanty et al., 2021). Digital literacy is needed to help students understand information validly and accurately. Technology has a very important role in education in conveying material to students. Through digital literacy, students are able to take advantage of digital media for the continuity of their education. In improving the learning process during the pandemic, increasing digital literacy is essential in evaluating English learning materials to be able to innovate in order to achieve maximum results.

The two groups experienced different treatments. The experimental group, class IX-A students, applied literacy-based instruction. Meanwhile, the control group, class IX-B students, applied conventional learning that had previously been applied and practiced by teachers at the school. To the experimental and control groups, the researcher delivered the material through the WhatsApp Group. The topic was presented to the experimental group utilizing a discussion method, which was more likely to convey the information through writing. A question and answer session with the students was also held by the researcher. The information offered can help students enhance their literacy skills. While the control group continued to use the same platform, employing the conversation approach and a question-and-answer process, the researcher employed the voice note capability to provide the same material as traditional learning. After giving the treatment, the researcher then gave a post-test to the students to see the results of the effectiveness of the implementation of literacy-based instruction aided by ICT on English learning in grade 9 students. The control and experimental group showed different results.

Learning media is one of the main components inseparable from the learning process. The absence of media, particularly aided by ICT, can affect the effectiveness of the teaching activities. Media is an intermediate between teachers and students for more effective and efficient curriculum delivery. However, using media to implement literacy-based education is less effective while studying online. This is due to a less consistent network connection, which can interfere with student learning activities. To distribute materials to students, the online learning relies



heavily on the internet network. As a result, material distribution will be ineffective and inefficient.

Considering the research results and the previous discussion, the researcher concluded that investigating the effect of literacy-based instruction on English learning obtained significant results. This is evident from the results obtained for the two groups previously described by descriptive statistical analysis for the acquisition of pre-test and post-test. The results of obtaining the alternative hypothesis are accepted so that there is a significant influence on investigating the effect of literacy-based instruction. Another thing can be seen through the average value of the experimental group that is higher than the control group. In addition, the interview guide instrument was analyzed by interactive model analysis. This research shows a significant effect of literacy-based instruction aided by ICT on English learning in junior high school.

There are two discussions in this study, namely the significant influence of literacy-based learning and non-literacy-based learning and the weaknesses in the implementation of literacy-based instruction aided by ICT on English courses in grade 9 students in secondary school. Based on the findings of this study, the implications are that investigating the effect of literacy-based instruction has a positive impact on students. The application of literacy-based learning aided by ICT can affect reading and writing skills on student learning outcomes in learning English. However, there have been several revisions in the blueprint questions based on the expert's advice. The expert's assessment of the blueprint belongs to the very good category based on the assessment instrument compiled by researchers.

The weakness of the application of literacy-based instruction is the limitations of students in accessing material when online learning takes place. Different geographical contexts significantly affect the learning process. The solution to overcome this problem is to provide Wi-Fi facilities in public places as stakeholders in education or provide more quota assistance from the government. The need for the provision of facilities such as Wi-Fi or network provider expansion must be improved by the local government to support the learning process, especially in education. So that students no longer have problems participating in learning. It is due to the network constraints experience that the application of literacy-based instruction is not effectively implemented when learning online. In this Covid-19 pandemic, teachers must be able to take advantage of technological advances, especially in digital literacy in communicating (Kajin, 2018). According to Eryansyah (2019), the transition process in teaching EFL students has undoubtedly changed to online learning. One of them is the use of technology used in learning. The use of media such as Google Classroom, WhatsApp Group, YouTube, and PowerPoint happens when online learning takes place as a support during the teaching activities. The world of education is inseparable from the influence of increasingly rapid technological developments. The digitalization process significantly influences the world of education to access information (Listyaningsih et al., 2021). Online learning uses the internet by applying various creative learning content, so that the transformation process from conventional learning to digitalization will appear. Literacy ability plays a decisive role for students because it affects their learning skills and success. Good literacy skills will help students understand spoken, written, picture, or visual texts.

## **CONCLUSION**

Based on the analysis of the results of the pre-test and post-test on the independent sample t-test, it was concluded that there was a significant increase. The findings of other analyses indicated a significant effect on literacy-based instruction as seen from the effect size acquisition classified as a medium effect, namely 0.5. It implies the noticeable results in investigating the effect of literacy-based learning aided by ICT. The benefits of teaching literacy aided by ICT are recommended for English teachers to keep motivating students in increasing students' enthusiasm for learning. The application of literacy-based instruction aided by ICT, which uses various media, can help students create a pleasant learning atmosphere. The situation and conditions during Covid-19 require teachers to use technology to deliver material during the learning process. This research investigating the effect of literacy-based instruction assisted by ICT can help as a reference to analyze the literacy skills of students who are more creative and

innovative. Other researchers can continue this research and implement the results for others who need it.

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The authors made significant contributions to the study's conception and design. The authors were in charge of data analysis, interpretation, and discussion of results. The final manuscript was read and approved by the authors.

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### Conflict of interest

The authors declare that there is no potential conflict of interest.

### Data availability statement

All data are available from the authors.

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