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The Effectiveness of Synchronous and Asynchronous E-Learning Environments in Teaching Writing to Different Personalities

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Abstract

Since the Covid-19 pandemic is affecting the new educational environments, synchronous and asynchronous e-learning environments have been integrated into the teaching and learning process. This study aims to explain how significant the students' achievement is taught in e-learning environments in teaching writing to students with different personalities. The design of this study was a quasi-experimental design with a 2 × 2 factorial design. This study was conducted on the eighth-grade students at SMP N 2 Mantup. The questionnaire and written test were carried out by t-test and two-way ANOVA. This study discovered a relationship between the e-learning environments and students' personalities, which influences their ability to write recount texts. This research showed that an asynchronous e-learning environment was effective for students with introverted personalities, and a synchronous e-learning environment was effective for students with extroverted personalities. This study also compared the use of the e-learning environments for each personality in improving writing recount text. Thus, this study presented a new perspective on the importance of paying attention to students' personalities in selecting the e-learning environments to improve writing recount text. The contribution of this study provided to the ELT development was new insight on how effective the teaching implemented in a dual mode digital environment is, no matter what personality the students possess. Thus, it is proven that modern teaching has no boundary, spatially and temporally.

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INTRODUCTION

The Corona-virus disease 2019 (Covid-19) pandemic has affected aspects of life, including education. Distance learning is an alternative to a new educational environment. Distance Learning is a learning solution that refers to the e-learning environment applied in the learning process (Hernawati et al., 2021). The e-learning environments refer to synchronous and asynchronous e-learning environments (Shahabadi & Uplane, 2015). In synchronous e-learning, it provides an online learning environment that is very interactive and live, where the teachers and students can simultaneously communicate with each other in real-time, they can ask and answer questions directly without increasing frustration, and it is facilitated by the instructor, which means that the learning process is learning-oriented interaction (Hrastinski, 2008; Nikmah & Azimah, 2020; Shahabadi & Uplane, 2015; Skylar, 2009).

In contrast, the asynchronous e-learning environment provides the flexibility for the students to access the materials and complete the assignments in the form of audio or videos, handouts, articles, power points presentations, and other materials that have already been provided by the instructor or teacher and can be accessed whenever they want (Amiti, 2020; Perveen, 2016). Here, the students have much time to think critically about the problems. Having no time-bound and giving responses at their leisure, they have sufficient time to answer the questions (Murphy et al., 2011).

Moreover, the researcher obtained data on students' and teachers' problems from preliminary research conducted by interviewing English teachers in eighth-graders of Junior High School 2 Mantup Lamongan. The students struggled to write recount text because they did not understand how to organize the text, generate ideas, and retell their experiences using the generic structure of recount text. This statement is in line with Karani (2007) who says that organization is the next problem after grammar in writing recount text. They get confused in composing the text paragraph coherently. Furthermore, they were afraid of making mistakes in writing, so they were less motivated to practice. Sometimes the students only get a certain mark for their writing without knowing the strengths and weaknesses of their compositions, so they do not know how to improve their writing to be a better one. Aside from the issues raised by the students, the teacher also faces challenges in teaching writing in this pandemic era. The teachers are expected to create a new learning environment creatively and actively, where they should be familiar with technology and at the same time can accommodate the diversity of students' personalities that positively influence students' success in learning a language (Erton, 2010). It means that both establishing a new learning environment and recognizing the students' personalities have a significant role in the accomplishment of writing teaching and learning process.

Furthermore, Nezhad et al. (2014) state that individual differences have two personality variables. They have extroverted and introverted personalities. Extroverted individuals are sociable, active, risk-taking, impulsive, expressive, and enjoy being in groups, whereas introverted individuals are quiet, introspective, and reserved, except for close friends. In other words, extroverted students are more active than introverted students during teaching and learning. It means there are significant differences in the needs of the learning environment for extrovert and introvert students (Offir et al., 2007). The extrovert students are more active and show their responses to the material. It seems like introverted students become passive students. This condition can be a problem in the teaching and learning process because it can influence their achievement in writing competence.

Therefore, the teacher needs to apply the appropriate e-learning environments such as a synchronous and asynchronous e-learning environment using effective, interactive, creative, and familiar applications that relate to technology which can be used to address challenges faced by the educators and students, so they can be more productive in distance learning situations,

especially when writing recount text (Ogbonna et al., 2019).

Moreover, synchronous and asynchronous e-learning environments have been studied and believed to be effective for teaching and learning. Some previous studies explored e-learning environments and students' personalities. Dealing with some studies about e-learning that were conducted by Hamid et al. (2020); Hermanto and Srimulyani (2021); and Mardiah (2020), the implementation of e-learning in the pandemic era has produced a variety of results. The findings demonstrated that e-learning implementation was effective, interactive, and suitable for distance learning in this pandemic era. The students from their homes can access the learning material delivered by the teacher or lecturer via an e-learning application that is approved by the institutions or lecturers.

Synchronous e-learning with the different objects during the pandemic era (Covid-19) that had been conducted by Hatta et al. (2020); Lestari and Dewi (2021); Mutiaraningrum and Nugroho (2020); and Taraj (2021) who state that during the pandemic era (Covid-19), both of teachers and students are challenged to apply the appropriate online learning environment. One of them is synchronous e-learning. They analysed the impact of synchronous e-learning during the teaching and learning process. The results revealed that there were some advantages to using synchronous e-learning. For instance, e-learning assisting students in improving their computer skills, task negotiation, task planning, opinions, questions and answers that could be easily completed. Furthermore, they could improve critical thinking, and give direct responses in the real-time, which could reduce students' attainment.

The implementation of asynchronous e-learning was conducted by some researchers, such as Astrid et al. (2021); Delahunty (2018); Martin-Beltrán and Chen (2013); McNeil (2014); Northey et al. (2015); Pinto-Llorente et al. (2017); and Saeed and Ghazali (2017) who are exploring and examining asynchronous e-learning used in teaching writing. They focused on students' interaction, feedback processes, commenting patterns, and how the students facilitate text revisions. Generally, the research finding illustrates the positive effects of the use of asynchronous e-learning that the teachers in EFL Classroom apply, such as having an excellent opportunity to organize and set their own pace of study and individual learning. Furthermore, they can confirm the extensive thinking opportunities brought by the teacher's written feedback or revision, and the peer feedback activities have a more significant effect. In addition, students give a positive response which means that it reduces the students' anxiety. Similar results to research conducted by Subiyantoro et al. (2021) showed that the students prefer to use asynchronous learning modes with low bandwidth because the internet connection is limited. Besides, they could suit their time and learning style based on their uncertain condition.

Besides, Boroujeni et al. (2015); Hazrati-Viari et al. (2012); Keshavarzi and Amiri (2016), Noprianto (2017); Sofeny (2017); and Sumarno (2015) have the same ideas that the differences in students' achievement can be based on personality types and students learning strategies, because different strategies and different personalities give impact on students' achievement, where students' personalities assists significantly influence the students' writing quality. Therefore, it means that recognizing their personality traits and language learning strategy choices might be effective in helping teachers design effective teaching strategies to achieve learning objectives.

However, this research was different from previous studies. This study had moderator variables, namely extrovert and introvert personalities. In addition, this study focused on the interaction between the e-learning environments and students' personalities in influencing writing recount text. This study also focused on the effectiveness of the e-learning environments in writing recount text by conducting a comparative test of the use of the e-learning environments by each personality type and the results of improvement through pre-test and post-test for each type of personality in improving recount writing text. Thus, this

research can be used to select the appropriate e-learning environments by considering the students' personalities.

METHODS

The researchers used a quasi-experimental study with a 2×2 factorial design to investigate the relationships among variables. This study's independent variables were synchronous and asynchronous e-learning environments, while the dependent variable was students' writing achievement. The experimental classes in this study are divided into two groups. The first group experimental class was taught using synchronous e-learning and the second group experimental class was taught using an asynchronous e-learning environment. These groups got the same materials, periods, and levels, but in different e-learning environments.

Moreover, the population of this study was the eighth graders of SMP N 2 Mantup, Lamongan in the academic year of 2021/2022, with six eighth grade classes totalling 153 students. Two classes were drawn from the population with a homogeneous English achievement's scores. Both classes were experimental. They were the experimental group I, given synchronous e-learning environment treatment, and the experimental group II, got asynchronous e-learning environment treatment.

The instruments of this research were the questionnaires and writing tests. The questionnaires were based on the Eysenck Personality Inventory (EPI) adopted and adapted into the short questionnaire in the previous study conducted by Sari (2019) which only took twenty-four questions together with the keys of extrovert personalities. The questionnaires were assigned to students first to get their categorization of students' personalities. Then, it is divided into two groups that consist of extrovert and introvert personalities.

The writing test was conducted twice in this study. They wrote recount text about their holiday. They were assessed before (pre-test) and after treatment (post-test). Both tests were administered individually and in accordance with the e-learning environments used. Each experimental group received the same pre-test and post-test time. In the first experimental group which employed a synchronous e-learning environment used the Zoom Meeting application, students did the pre-test and post-test simultaneously with real-time interaction in front of their respective devices. Then, the second experimental group used Google Classroom to create an asynchronous e-learning environment. The processing time for the pre-test and post-test was determined by the assignment upload time and was limited by the due date. Students worked concurrently at the same time but disassociated directly in real-time.

Construct validation was conducted with a validation test by two English education lecturers on translating the Eysenck Personality Inventory (EPI) instrument into Indonesian. In addition, the syllabus and lesson plans of the two e-learning environments were also validated by three junior high school English teachers as expert validators. Pre-test and post-test were conducted to determine the effect of treatment on the experimental groups, and the results were measured using a score based on the basics aspects of writing adapted from Brown (2004) such as content, organization, vocabulary, language use, and mechanics. Quantitative data were analysed using descriptive analysis and inferential statistics using SPSS software, namely normality, homogeneity, two-way ANOVA, paired sample test, and independent samples t-test.

RESULTS AND DISCUSSIONS

According to the results of the personality questionnaire, 15 students in experimental group 1 were classified as extroverted personalities and 15 students as introverted personalities. In experimental group 2, there were 17 students who were classified as extroverted and 14 students as introverted personalities.

Below are two tables which presented the result of the normality test of the pre and post-test in both experimental groups. The tests were utilizing Kolmogorov-Smirnov and Shapiro-Wilk

statistical tests in examining the normality of the pre-test and post-test data. Table 1 showed descriptive statistics of interaction among synchronous and asynchronous E-Learning environments, writing recount text, and students' personalities obtained from the post-test.

However, the Kolmogorov-Smirnov test for the Post-Test of introverted students in the second experimental class displayed that the data was not normally distributed ($Sig. = 0{,}034 < 0{,}05$), whereas the Shapiro-Wilk test presented the opposite ($Sig. = 0{,}078 > 0{,}05$), so it can be concluded that the pre-test and post-test data were normally distributed.

Table 1. Normality Test of the Pre-Test and Post-Test in Both Experimental Groups

Class	Personalities		Pre-Test		Post-Test	
			Kolmogorov-Smirnov	Shapiro-Wilk	Kolmogorov-Smirnov	Shapiro-Wilk
First Experimental Group	Introvert	Statistic	0,154	0,899	0,198	0,899
		df	15	15	15	15
		$Sig.$	0,200	0,093	0,116	0,092
	Extrovert	Statistic	0,169	0,947	0,161	0,951
		df	15	15	15	15
		$Sig.$	0,200	0,484	0,200	0,539
Second Experimental Group	Introvert	Statistic	0,150	0,932	0,236	0,889
		df	14	14	14	14
		$Sig.$	0,200	0,321	0,034	0,078
	Extrovert	Statistic	0,098	0,956	0,169	0,908
		df	17	17	17	17
		$Sig.$	0,200	0,557	0,200	0,093

Table 2. Post-Test Descriptive Statistics of Interaction among Synchronous and Asynchronous E-Learning Environments, Writing Recount Text, and Students' Personalities

Class	Personalities	Post-Test		
		Mean	Std. Dev	*N*
Synchronous E-Learning Environment Class	Extrovert	71,27	4,992	15
	Introvert	74,80	5,747	15
	Total	73,03	5,586	30
Asynchronous E-Learning Environment Class	Extrovert	66,47	6,793	17
	Introvert	76,79	4,209	14
	Total	71,13	7,715	31
Total	Extrovert	68,72	6,402	32
	Introvert	75,76	5,076	29
	Total	72,07	6,765	61

Prior to that, the Kolmogorov-Smirnov and Shapiro-Wilk tests for pre-test and post-test results in the first experimental group taught by a synchronous e-learning environment and the second experimental group taught by an asynchronous e-learning environment revealed that both were normally distributed ($Sig. > 0{,}05$) (see Table 1).

First, a two-way ANOVA test on the post-test results was required to determine the interaction between synchronous and asynchronous e-learning environments and students with different personalities in processed of writing recount text. Table 2 presented a summary of descriptive statistics for the post-test results.

Table 3. Test between Subject Effect of Interaction between E-Learning Environments and Students' Personalities in Writing Recount Text

Source	Type III Sum of Squares	df	Mean Square	F	$Sig.$
Corrected Model	965,812a	3	321,937	10,310	0,000
Intercept	317573,620	1	317573,620	1,017$E4$	0,000
E-Learning Environment Class	29,964	1	29,964	0,960	0,331
Personalities	727,581	1	727,581	23,300	0,000
E-Learning Environment Class * Personalities	174,489	1	174,489	5,588	0,022
Error	1779,926	57	31,227		
Total	319546,000	61			
Corrected Total	2745,738	60			

Table 4. Paired Sample Test of Students with Extroverted Personality of the First Experimental Group who were Taught Writing Recount Text in Synchronous E-Learning

		Paired Differences					t	df	$Sig.(2-tailed)$
		Mean	Std. Deviation	Std Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pretest Extrovert Sync –Post-test Extrovert Sync	−5,667	9,839	2,540	−11.115	−,218	−2.231	14	0,043

Based on Table 3, there was no interaction between synchronous and asynchronous e-learning environments in affecting students' writing recount text ($Sig. = 0.331 < \alpha = 0{,}05$). Moreover, Table 3 also showed there was an interaction between students' personalities in affecting students' writing recount text ($Sig. = 0.000 < \alpha = 0{,}05$). Furthermore, there was an interaction between e-learning environments (synchronous and asynchronous) and students' personalities in affecting students' writing recount text ($Sig. = 0.022 < \alpha = 0{,}05$).

Furthermore, the dominant result in Table 3 indicates an interaction between the variables in affecting students' writing recount text. Furthermore, it indicates an interaction between e-learning environments (synchronous and asynchronous) and students' personalities (extrovert and introvert) in teaching writing recount text.

Therefore, the researchers concluded that e-learning environments and personalities significantly affect students' writing achievements. It was related to Almusharraf and Almusharraf (2021) asserting that social personalities (extrovert and introvert) need to be considered in the online learning by located the teachers in the learning process used it because both of them affect students' success. Different personalities also have different environmental preferences and learning techniques especially in writing skills (Revola et al., 2018; Sumarno, 2015). This statement was in line with Qanwal and Ghani (2019) who stated that different personalities will produce different learning outcomes, especially in writing skills. Not limited to writing skills, students' personality also affects

other language skills, and requires the selection of appropriate learning to handle them (Andriyani, 2016; Wulandari, 2017). Thus, it can be concluded that the e-learning environments and personality types contributed significantly and positively enhanced the students' writing achievement.

Second, the paired samples test in table 4 displayed that the second null hypothesis was rejected ($Sig.(2-tailed) = 0{,}043 < \alpha = 0{,}05$). It means there was a significant difference in writing recount text of students with extroverted personalities in the pre-test and post-test. Therefore, it can be said that the synchronous e-learning environment effectively improved students' writing recount text for extrovert personalities.

In other words, the synchronous e-learning environments effectively improved the students' writing recount text for students with extroverted personalities. It was in line with Zeichner (2019) who stated that extroverted students need more feedback, especially the ability feedback that can strengthen their belief in their ability to learn effectively and be satisfied in their learning process because their standard was external. It means that synchronous e-learning environments, both students and teachers can communicate in real-time, ask questions and answers, provide feedback during the study process, and access and understood the lesson materials (Bower et al., 2015; Rahayu, 2020; Zydney et al., 2020). Thus, they showed proficient writing skills. In other words, their writing achievement can be improved than before (Kafryawan, 2020).

The third result for this study was based on the paired samples test that compared the pre-test and post-test of introverted students who were taught writing recount text in the synchronous e-learning environment (see table 5). Since the third null hypothesis was accepted ($Sig.(2-tailed) = 0{,}074 > \alpha = 0{,}05$), it can be concluded that there was no significant difference in writing recount text of students with introverted personalities in the pre-test and post-test. Therefore, a synchronous e-learning environment did not significantly improve students' writing recount text for introverted personalities.

This result was in line with Pavalache-Ilie and Cocorada (2014) who stated that introverted students disapprove of collaborative learning in an online environment where they lack face-to-face feedback from the teacher. Instead, they prefer online learning where they can work alone, conduct experiments, solve their assignments in rhythm, and not be afraid to miss the teacher's words (Offir et al., 2007; Zeichner, 2019). Furthermore, when they have their own pace of study, they can extend their critical thinking skills and develop their creativity and motivation to be better not only about the materials but also in their skill especially writing skills (Tusino et al., 2020; Wahyuni et al., 2020). Thus, they can achieve better writing skills through the asynchronous e-learning environment.

Table 5. Paired Sample Test of Students with Introverted Personality of the First Experimental Group who were Taught Writing Recount Text by Synchronous E-Learning

		Paired Differences					t	df	$Sig.(2-tailed)$
		Mean	Std. Deviation	Std Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pretest Introvert Sync – Post-test Introvert Sync	−5,933	11,895	3,071	−12,521	,654	−1,932	14	0,074

Table 6. Paired Sample Test of Students with Extroverted Personality of the First Experimental Group who were Taught Writing Recount Text in Asynchronous E-Learning

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std Error Mean	Lower	Upper	t	df	$Sig.(2-tailed)$
Pair 1	Pretest Extrovert Async –Post-test Extrovert Async	0,294	10,469	2,539	−5,088	5.677	0,116	16	0,909

Table 7. Paired Sample Test of Students with Introverted Personality of the First Experimental Group who were Taught Writing Recount Text in Asynchronous E-Learning

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std Error Mean	Lower	Upper	t	df	$Sig.(2-tailed)$
Pair 1	Pretest Introvert Async –Post-test Introvert Async	−10.857	12,745	3,406	−18,216	−3,498	−3,187	13	0,007

The fourth results showed that there was no significant difference in writing recount text of students with extroverted personalities in the pre-test and post-test since the null hypothesis was accepted ($Sig.(2-tailed) = 0{,}909 > \alpha = 0{,}05$) (see Table 6). Therefore, it can be said that the asynchronous e-learning environment did not significantly improve students' writing recount text for extrovert personalities. This result was similar to a study conducted by Borup et al. (2013) who stated that extraversion students prefer speaking directly than writing what they think about. They can explain more if they have the opportunity to discuss and can better understand the material with a direct verbal approach (Taraj, 2021; Yuliani et al., 2019).

Extroverted students are less likely to participate in e-learning environments that tends to use written interactions. It means they were less motivated to express their feelings and thoughts through writing. In line with Borg et al. (2021), the writing scores of extroverted students in asynchronous e-learning environments had lower than those of extroverted students in synchronous e-learning environments. Students with extroverted personalities could be themselves when they have direct interaction (Amichai-Hamburger et al., 2002). Thus, it can be concluded that the asynchronous e-learning environment did not suggest for extroverted students in their writing class. The extroverted students need and like to communicate and discuss with other people directly rather than in text.

The fifth result showed the result of paired samples test of introverted students who were taught to write recount text in the asynchronous e-learning environment. Since the fifth null hypothesis was rejected ($Sig.(2-tailed) = 0{,}007 < \alpha = 0{,}05$) (see table 7). There was a significant difference in writing recount text of students with introverted personalities in the pre-test and post-test. Therefore, it can be said that the asynchronous e-learning environment significantly improves students' writing recount text for introverted personalities.

This result was similar to some studies conducted by Zaswita and Ihsan (2020) who stated that introverted students prefer online platforms where they lack face-to-face communication.

However, they can be their "real self" when they have opportunities to have more time to read, write, and try to produce the correct language (Amichai-Hamburger et al., 2002). Therefore, it was not surprising that the students who had introverted personalities were better in writing achievement in an asynchronous e-learning environment than the extrovert students because the extrovert students lack face- to-face communication which becomes their positive stimulus, and they may feel more isolated and tend to be careless and less correct in constructing the phrases when finishing their writing task (Offir et al., 2007; Revola et al., 2018; Zainuddin, 2016). Thus, it can be proved that introverted students were better at constructing their writing than extroverted students in an asynchronous e-learning environment.

The sixth research objective was to test the effectiveness of synchronous and asynchronous e-learning environments in teaching writing to eighth graders with extroverted students' personalities. Since the data was homogeneous from Levene's test ($Sig. = 0{,}128 > 0{,}05$), table 8 presents the value of $Sig.(2-tailed)$ in a row equal variance assumed was 0,032 which is lower than the level of significance ($\alpha = 0{,}05$). Thus, the null hypothesis was rejected and proved a significant difference in the effect of synchronous and asynchronous e-learning environments to teach writing recount text for students with extroverted personalities. Thus, based on the mean scores of the post-test, it can be said that the extrovert students who were taught writing in synchronous e-learning environments were significantly better than the extroverted students who were taught writing in the asynchronous e-learning environment.

This result can be found in some studies conducted by Weiser et al. (2018) who stated that extroverted students participate more when they have a direct interaction between the teacher and students. Therefore, the synchronous environment improves learning outcomes more than the asynchronous environment where extroverted students lack interaction directly (Amichai-Hamburger et al., 2002; Offir et al., 2007). As the characteristics of extrovert personality, the extrovert students prefer real-time interaction with others in the learning process where they often contribute to sharing their ideas and apply the collaboration formats in a synchronous environment. Students with extroverted personalities also tend to understand learning using a verbal approach rather than a written one (Yuliani et al., 2019). However, they rarely contributed to an asynchronous e-learning environment (Borg et al., 2021). Therefore, it was needed to have more attention to the appropriate e-learning environments for the different students' personalities, especially for extrovert students who like to communicate with each other in real-time interaction.

The seventh research objective was to test the effectiveness of synchronous and asynchronous e-learning environments in teaching writing to eighth graders with introverted students' personalities.

Table 8. Independent Sample of Students with Extrovert personality who were Taught Writing in Synchronous and Asynchronous E-Learning Environments

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	$Sig.$	t	df	$Sig.(2-tailed$	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	2,445	0,128	2,249	30	0,032	4,80	2,133	0,441	9,151
Equal variances not assumed			2,293	29,1	0,029	4,80	2,092	0,519	9,074

Table 9. Independent Sample of Students with Introverted Personality who were Taught Writing in Synchronous and Asynchronous E-Learning Environments

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	$Sig.$	t	df	$Sig.(2-tailed)$	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	2.191	.150	−1.055	27	.301	−1.99	1.88	−5.848	1.877
Equal variances not assumed			−1.066	25.61	.296	−1.99	1.86	−5.816	1.845

Since the data was homogeneous from Levene's test in table 9 ($Sig. = 0{,}150 > 0{,}05$), the value of $Sig.(2-tailed)$ in a row equal variance assumed was 0,301 which was higher than the level of significance ($\alpha = 0{,}05$). Thus, the null hypothesis was accepted, which means there was no significant difference in the effect of synchronous and asynchronous e-learning environments on teaching writing recount text for students with introverted personalities. Furthermore, the mean post-test scores were quite similar in both experimental groups of introverted students.

Here, students with introverted personalities outperformed extroverted personalities in writing skills in both experimental classes needed to be highlighted. It can be seen from the higher average of post-test scores, even for extroverted students taught writing in a synchronous e-learning environment. Thus, introverted students tend to be more structured in writing (Zainuddin, 2016). This result was in line with studies conducted by Boroujeni et al. (2015), Qanwal and Ghani (2019), and Zaswita and Ihsan (2020) who state that introverted students' writing achievement outperformed extroverted students. Furthermore, the good writing ability of students with introverted personalities were one of the causes for consistently having good achievements even in different e-learning environments.

CONCLUSIONS

This research focused on comparing synchronous and asynchronous e-learning environments in teaching writing recount text for students with different personalities. Some interactions influence each other, they were e-learning environments, students' personalities, and students' writing ability of recount text. Using a synchronous e-learning environment has proven to improve extroverted students' writing recount text ability, but the opposite was found for introverted students.

Using an asynchronous e-learning environment proved ineffective in improving extroverted students' writing recount text ability but was adequate for introverted students. Then, extroverted students who were taught writing recount text using a synchronous e-learning environment proved to be better than extroverted students who were taught using an asynchronous e-learning environment.

Finally, there was no significant difference between introverted students who were taught writing recount text using synchronous and asynchronous e-learning environments. However, it should be noted that overall, students with introverted personalities perform better in writing recount text skills than extroverted students.

However, this study is still limited to writing recount text. Thus, the suggestion for future researchers is to explore other writing texts or skills, such as speaking, reading, and listening. In addition, the student's personalities in this study were classified only into introverted and extroverted. Therefore, future studies can discover other types of classification (e.g; gender, level of motivation, level of participation) as the other types of accessible classification.

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