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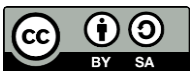

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The Correlation of AI Literacy and Writing Skill on 11th Senior High Students in Denpasar

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Abstract
This research analyzed the correlation of AI literacy and writing of senior high students. The research was conducted in Harapan Senior High School on South Denpasar, Bali. This research analyzed the correlation and the strength level of relationship between AI literacy and writing skills. The correlational study design had been utilized as the research design. This study utilized the purposive sampling technique and found out from 227 senior high school students with 151 participated in this study. The data collection used in this study was survey questionnaires, which had 22 questions in total. The findings highlighted that there was a positive and significant correlation between AI literacy and writing skill of the students (Sig. 2-tailed result < 0.05). Also, the strength level of relationship between AI literacy and writing skill reached Moderate Positive relationship (Pearson correlation coefficient (r) 0.366, and the p-value 0.001 < 0.05). The students' AI literacy got better, their writing skill also improved together. The findings highlighted the students' writing skill development could also be improved along with their AI literacy since they correlated each other. This research suggested the need of AI literacy improvement towards the students when the AI tools were implemented into the English learning process, and further research about the other English language skill fields that relates with the AI literacy.
Keywords: *AI Literacy, Writing Skill, Artificial Intelligence in Education, Correlational Study*

Introduction

In education, the literacy plays important role as the basic concept to comprehend the learning materials. Not only in the field of learning process, some literacy exists nowadays, such as AI literacy. The literacy of Artificial Intelligence comes along with the development of Artificial Intelligence itself. Some researchers defined AI literacy as the fundamental comprehension of the way people use AI

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beneficially and assess properly, while the people who is proficiently implement AI technology can also be labelled as AI literate (Laupichler et al., 2023; Wang et al., 2023). Additionally, the ability to assess towards AI technologies, cooperate with AI tools, as well as apply the AI application in many workplaces is the definition of AI literacy (Long and Magerko, 2020). Throughout these definitions, the AI literacy connects closely with the utilization, assessment, and cooperation of AI technologies.

Nowadays, most of application appears to have AI tools in it. That said, the AI literacy matters higher when it comes to the user of the technology. Knowing how widely the AI tools spread in many fields, it also affects the students as the user. In terms of learning, AI tools affect not only the students as user, but also their learning process. English is one of the learning processes that has close relation with the application of AI tools. That being said, the needs to analyze how AI literacy can affect English language skills matters these days, especially the English writing skill. Puspitasari et al. (2024) mentioned that writing defined as the complex activity which relates with sentence level development such as the structure of sentence, its grammar and vocabularies, as well as the spelling of the words. Moreover, Riyanti et al. (2021) defined writing skill as the writers' ability to produce and communicate the language in the form of written text.

Recent studies about writing skill with AI tools implementation have been conducted, and have many results to be observed. Lim & Phua (2019) conducted the research about teaching writing with Linguistics Feedback Tool. This study found out that the tool supported the students' language accuracy and helped the teachers in marking the learners' writing results. Additionally, Muthmainnah (2019) conducted the research about the correlation of digital literacy comprehension on students' writing originality found a positive relationship since most of the students already had prior knowledge towards digital literacy.

The research conducted by Kayaduman and Battal (2020) which focused on the relation of digital literacy and perception of distance education, found out the positive and significant relationship. Pheng et al. (2021) conducted the research about teaching writing through technology acceptance model (TAM) and found out that the teachers tend to implement technology towards teaching writing. Also, the teachers chose to use technology acceptance model since it helped them in developing new teaching methods and collecting new ideas for teaching. Additionally, Moreover, the study conducted by Alamri (2021) focused on some challenges of ESL teachers during the use of technology in teaching writing. This study found out that the teachers' perception had positive perception towards the use of technology, and few students felt fine in technology implementation on their writing class.

Based on some previous studies regarding the teaching writing by technology and AI tools, they found out mostly relevant with the teaching and learning process. On the other hand, as the implementation of AI tools relevant, there is still lack of research about the AI literacy on English learning skills, especially on students' writing skill. Mostly the previous researches implemented digital literacy which is

not specifically for AI literacy itself. Moreover, the other research about AI literacy teaching towards social studies had been conducted by Yetişensoy & Rapoport (2023). This study found out that the correlation among AI literacy teaching and social studies was still weak due to the awareness towards AI literacy was deficient. The less awareness towards the importance of AI literacy made the relation to social studies weak. Also, this study suggested that the needs of AI literacy research for future has to be conducted seeing how the changes of AI tools in the future is very fast-paced.

Another previous study conducted by Obenza et al. (2024) related with correlational study between Cognitive Absorption and AI Literacy towards students' gender. This research applied quantitative research strategy and non-experimental correlational study. The research found out that the cognitive absorption towards AI Literacy was different on both male and female students. This could happen due to the AI literacy variety around 37.8% pointed out the effect of cognitive absorption. Moreover, the previous study conducted by Aglibot et al. (2024) discussed about the relationship of ChatGPT usability towards students' English essay writing competence.

This research involved descriptive correlational design. The research found out that the students recognized the ChatGPT usages helped them to improve their essay writing proficiency, since the system provided by ChatGPT really supports their writing process. On the other hand, the research also found very weak relationship between the use of ChatGPT towards students' English essay writing competence through Pearson correlation coefficient; 0.042. Furthermore, this research stated that within the context of ethical use and responsibility in using ChatGPT needs to be developed in order to improve students' writing competence.

Seeing the previous studies regarding the teaching writing using AI technologies, mostly the research found it relevant since the AI tools implementation can be applied in many fields of work. On the other hand, the AI literacy implementation and research are still deficient since the previous studies showed only the implementation of digital literacy mostly used on the research. This leads to the needs of conducting the research about AI literacy towards English language skills, especially writing skills.

Even though the utilization of AI tools towards learning process mostly obtained positive and relevant results, but the AI literacy still needed to be analyzed in terms of English language skill implementation. That way, the gap that collected based on previous studies relates with the correlational study on students' AI literacy, to see its correlation towards the writing skill. This research found the gap that the correlational study between AI literacy and writing skill needs further analysis to find out its correlation, the direction of the relationship, and also the strength level of the relationship between these variables. This study found a novelty that this research will be conducted to see the correlation of AI literacy and writing skill on eleventh grade senior high students in Harapan Senior High School Denpasar. To fill the gap of this study, there are three research questions need to be answered:

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1. Is there any relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar?
   Hypothesis 1:
   H0: There was no relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar (Sig. 2-tailed results > 0.05).
   Ha: There was a relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar (Sig. 2-tailed results < 0.05).
2. Is there any positive relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar?
   Hypothesis 2:
   H0: There was no positive relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar (Sig. 2-tailed results > 0.05).
   Ha: There was a positive relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar (Sig. 2-tailed results < 0.05).
3. Is there any strength level of relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar?
   Hypothesis 3
   H0: There was no strength level of relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar (Pearson correlation coefficient (r) between 0 and 0.01, and the p-value > 0.05).
   Ha: There was a strength level of relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar (Pearson correlation coefficient (r) between 0.30 and 0.70, and the p-value < 0.05).

Method

Research Design

This study employed a quantitative correlational research design to examine the relationship between AI literacy and writing skill. Data were collected using a questionnaire, making the study cross-sectional in nature. The use of quantitative methods allowed the variables to be measured numerically and analyzed statistically to identify the strength and direction of their relationship. Ary et al. (2019) explained that the correlational study involved the research with purpose to find comparison between two or more than two variables of the research. The use of correlational study was relevant the purpose of this study, which was to find out the correlation of AI literacy and writing skill.

Population and Sampling

As the study involved correlational study, the population of this research involved the 11th grade senior high students in Harapan Senior High School at South Denpasar. This school was chosen as the place to conduct the study because this school has utilized technology in learning English and the teachers in other subjects also implemented AI tools as the additional resources for the students. Additionally, the students in this school have already been familiar with the AI technologies. The eleventh-grade senior high students were chosen since their learning process already involved writing process at most in compare with twelfth-grade students who were focusing on their national exam. Besides, during their writing process also involved the use of AI tools. So that to see its relationship would be much relevant.

The sampling technique used in this study was purposive sampling technique. Ary et al. (2019) mentioned that the purposive sampling referred to the type of sampling where the participants of the research are chosen and judged as the representative of the population, which were also included as the sample. With the purpose to find out the correlation of AI literacy and writing skill, this purposive sampling technique was appropriate to be applied since the researcher could determine the sample throughout criteria as their grades were 11th grade senior high students.

The purposive sampling was chosen since the researcher could determine the range of participants that relevant with the variables of the research which is about AI literacy and writing skill. The relevant population ensures the research to gain appropriate results since the participants also have the experiences of AI technology, so to seek out the relation of both variables become easier. The total of six classes of 11th grade senior high students as the participants of this research. The total of students on all six classes were 227 students, with the total of students who filled the online questionnaire reached 151 students.

That way, this study had been conducted with 151 participants who already filled the online questionnaire. It means the return rate of the questionnaires used in this research within 227 total 11th grade students reached 66.52% return rate from the students, and the total of 151 11th grade students became the participants of the questionnaires.

Research Instruments

In order to collect the data, this study involved survey as the data collection technique. Survey was chosen to be the data collection method because the use of survey could relate with the sampling technique of this research, where the students could fill the survey based on their availability towards the subjects. By collecting data through survey, the researcher elaborated the variables within specified groups and to gain information towards the correlation between AI literacy and writing skill (Ary et al., 2019). Furthermore, the type of survey used in this study was Web-based survey, where this kind of survey relevant to be implemented as it allowed the participants to fill the online survey by themselves. This type of survey was also

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relevant since the web-based survey supported the process of collecting data for the students, as they were all familiar with the use of online survey such as Google Form (Ary et al., 2019).

Following up with the use of survey as data collection method, this study developed questionnaire as the data collection instrument. The type of questionnaire used in this research was open-response questionnaire, where it allowed the students to fill the questionnaire with varieties of level towards their AI literacy and writing skill (Heigham & Croker, 2009). Open-response questionnaire also relevant with the needs of this study to collect the information about the correlation of AI literacy and writing skill, so that the students could determine their choices based on the statements of the questionnaire.

There were two questionnaires developed in this research, in order to collect the data about AI literacy and writing skill relationship. The questionnaire of AI literacy was developed by adapting from the AI literacy standard scales developed by Wang et al. (2022), and writing skill questionnaire was developed by adapting from the theory of Khan et al. (2024). There were 22 questions in total for the questionnaires of this study. The questions of the questionnaires were based on 12 questions related with AI literacy standard scales based on the theory from Wang et al. (2022).

The AI literacy standard scales included the awareness, usage, evaluation, and ethics of AI literacy. The other 10 questions were about writing skill, which were based on writing skill theory from Khan et al. (2024). The writing skill theory included the writing skill towards AI literacy and AI tools. The timeline of data collection process was started on May 6th, 2025 as the researcher started to collect information about the schedule to the teachers. After that on May 10th the researcher started to collect the data from questionnaires. Moreover, the researcher analyzed the data collected and summarized it.

Data Validity and Reliability

Data validity and reliability had been conducted as the purpose to measure the validity and reliability of the instruments used in this study. The validity and reliability test focused on testing the instruments including the questionnaires of AI literacy and writing skill. To validate the questionnaires of this research, the researcher conducted an expert judgment process towards the questionnaires from the experts.

The Content Validity of the Questionnaires

In order to validate the questionnaires used in this study, the content validity was conducted to test the validity of the questionnaires both the AI literacy and writing skills. The content validity had been analyzed using the Gregory Formula based on the theory of Nurkancana and Sunartana (Nurkancana, 1992). The Gregory Formula could be elaborated on the following Table 1 below.

Table 1. Gregory Formula

Tabulation Result		**Expert 1**		**Notes**
				A: Expert 1 and Expert 2 do not agree
		Irrelevant	Relevant	B: Expert 1 agrees; Expert 2 does not agree
Expert 2	Irrelevant	A	B	C: Expert 1 does not agree; Expert 2 agrees
	Relevant	C	D	D: Expert 1 and Expert 2 agree

Tabulation Process: $V: \frac{A+D}{A+B+C+D}$

Table 2. Validity Criteria

Range	**Quantitative Data**
0.8 – 1.00	Very High Validity
0.6 – 0.79	High Validity
0.40 – 0.59	Intermediate Validity
0.20 – 0.39	Low Validity
0.00 – 0.19	Very Low Validity

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Based on the Gregory Formula table and the validity criteria table, the questionnaires used in this study had been analyzed and elaborated as follows:

Table 3. Results of Expert's Judgment on Questionnaires

Tabulation Result		**Expert 1**		**Notes**
				A: Expert 1 and Expert 2 do not agree
		Irrelevant	Relevant	B: Expert 1 agrees; Expert 2 does not agree
Expert 2	Irrelevant	A = 0	B = 0	C: Expert 1 does not agree; Expert 2 agrees
	Relevant	C = 0	D = 22	D: Expert 1 and Expert 2 agree

The result was tabulated as follows:

$$\mathcal{V} = \frac{0 + 22}{0 + 0 + 0 + 22} = \frac{22}{22} = 1.00$$

Based on the data tabulation process in Table 3, the content validity reached 1.00. The results of the content validity on the questionnaires used in this study categorized as very high validity. That way, the questionnaires of this study had been validated to be used to collect the data.

The Reliability Test of the Questionnaires

As the content validity of the questionnaires had been finished and valid, then the second test was about reliability test of the questionnaires. This test had been conducted to measure the reliability of the questionnaires about AI literacy and writing skill. The reliability test had been conducted by using the Cronbach's Alpha statistical test (Cronbach, 1951) through SPSS version 27 application. The following Table 4 showed the category of Cronbach's Alpha scores.

Table 4. Cronbach's Alpha

Cronbach's Alpha Score	Level
> 0.80 – 1.00	Very Reliable
> 0.60 – 0.80	Reliable
> 0.40 – 0.60	Quite Reliable
> 0.20 – 0.40	Rather Reliable
0.00 – 0.20	Less Reliable

The reliability test for the questionnaires of this study had been done using SPSS version 27. The results of the analysis had been elaborated as follows.

Reliability Statistics

Cronbach's Alpha	N of Items
.777	2

Figure 1. Cronbach's Alpha Scores for Questionnaires

Based on Figure 1, the results of the Cronbach's Alpha test reached 0.777. Based on Table 4, the results of the reliability test had been categorized as Reliable instrument. That way, the questionnaires of this study had been tested, and had been proven as valid and reliable instrument to be used to collect the data of this study. The ethical consideration towards using the questionnaires were judged by the supervisors and applicable in the research process.

As the data collected through the questionnaires, the researcher used quantitative research to analyze the data. The quantitative research method used in this study was Simple Correlation Test (Pearson Product Moment). Simple correlation was used to collect the information about the correlation of AI literacy and writing skill, which was relevant with the purpose of this study. The analysis of Simple correlation test had been done using SPSS application version 27.

Results

Findings

This section elaborated the finding throughout this research, which focused on the correlation of AI literacy and writing skill on 11th grade senior high students in Denpasar. The data was collected through online questionnaire using Google Form that was shared to the class by the researcher. The detailed finding of the data had been analyzed through SPSS application version 27, and interpreted using Simple Correlation Test (Pearson Product Moment). The finding of this study explained as follows.

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Descriptive Statistics

In order to find out the correlation of AI literacy and writing skill, the researcher conducted a simple correlation test using SPSS application version 27. Before conducting the simple correlation test, there were some prerequisite tests that have been done by the researcher, to check

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AI Literacy	151	35	59	47.99	4.432
Writing Skill	151	28	50	39.09	5.637
Valid N (listwise)	151				

Descriptive statistics were used to summarize the characteristics of the data. The results showed that AI Literacy had a mean score of 47.99 (SD = 4.43), while Writing Skill had a mean score of 39.09 (SD = 5.64). The minimum and maximum values for both variables were within the observed score ranges, and the standard deviation values indicated sufficient variability among participants' scores. These results suggest that the data are appropriate for further analysis and can be continued to normality testing.

Simple Correlation Test

In order to find out the correlation of AI literacy and writing skill, the researcher conducted a simple correlation test using SPSS application version 27. Before conducting the simple correlation test, there were some prerequisite tests that have been done by the researcher, to check the data through the assumption tests. This assumption tests were conducted with purpose to test whether the data of the study already normally distributed, and linear with both variables. The results of the assumption tests were described as follows.

Table 5. Normality Test

One-Sample Kolmogorov-Smirnov Test

			Unstandardized Residual
N			151
Normal Parameters[a,b]	Mean		.0000000
	Std. Deviation		5.24685469
Most Extreme Differences	Absolute		.068
	Positive		.039
	Negative		-.068
Test Statistic			.068
Asymp. Sig. (2-tailed)[c]			.085
Monte Carlo Sig. (2-tailed)[d]	Sig.		.092
	99% Confidence Interval	Lower Bound	.085
		Upper Bound	.100

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.

The first prerequisite test was Normality test. In this analysis, the focus was at the Asymp. Sig. (2-tailed) result. Based on Table 1, it showed the results of the normality test between AI literacy and writing skill. Based on the Table 5, the data can be categorized as significant when the Sig. score is above 0.05. Besides, the data analysis was using the Kolmogorov-Smirnov due to the total participants were more than 50 (151 > 50). Based on the data in Table 5, D (151) = 0.068, p = .085. It means the data was already significant and distributed normally because the result was more than 0.05 (0.085 > 0.05). As the results of the normality test already passed, the data could be categorized as normally distributed and significant. Afterwards, the second prerequisite test, which was the linearity test could be continued.

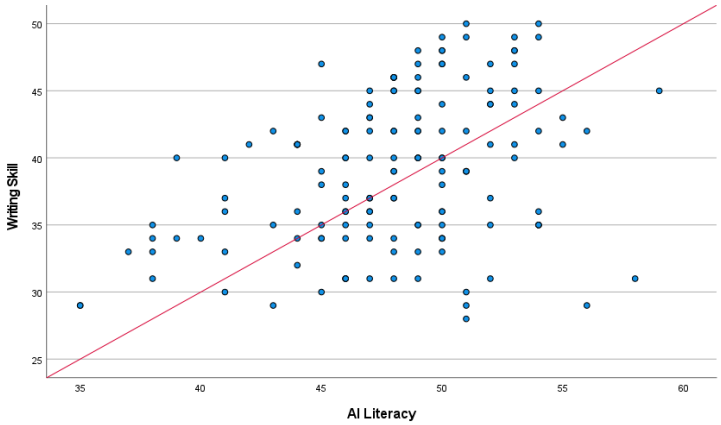
Table 6. Linearity Test

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Writing Skill * AI Literacy	Between Groups	(Combined)	1261.007	22	57.319	2.093	.006
		Linearity	637.279	1	637.279	23.268	<,001
		Deviation from Linearity	623.728	21	29.701	1.084	.373
	Within Groups		3505.695	128	27.388		
	Total		4766.702	150			

The second prerequisite test in simple correlation test called as linearity test. The Table 6 showed the results of the linearity test between AI literacy and writing skill. The linearity test has been conducted to see whether the data linear or not. To see the linearity of the data, it can be seen from the Sig. Value on Deviation from Linearity. The data can be called as linear correlation when the Sig. value is more than 0.05 (> 0.05). Based on Table 2, F = 1.084, p = .373. It means the data was already linear because the Sig. value was more than 0.05 (0.373 > 0.05). After the data categorized as linear data, the third prerequisite test, which was Homoscedasticity (Scatter Plot) Test could be continued.

Table 7. Homoscedasticity (Scatter Plot) Test



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The third prerequisite test in simple correlation test called as homoscedasticity (scatter plot) test. In this test, the focus was on the graph drawn on the scatter plot graph. To pass the third prerequisite test, the graph must show a straight pattern from bottom left to the top right. Based on Table 7, the straight pattern showed from bottom left to top right with the data around the red line. It means there was a positive correlation towards both variables. That way, after all three prerequisite tests have been passed, the simple correlation to check the correlation between AI literacy and writing skill could be conducted.

Table 8. Simple Correlation Test

Correlations[b]

		AI Literacy	Writing Skill
AI Literacy	Pearson Correlation	1	.366**
	Sig. (2-tailed)		<,001
	Sum of Squares and Cross-products	2945.974	1370.185
	Covariance	19.640	9.135
Writing Skill	Pearson Correlation	.366**	1
	Sig. (2-tailed)	<,001	
	Sum of Squares and Cross-products	1370.185	4766.702
	Covariance	9.135	31.778

**. Correlation is significant at the 0.01 level (2-tailed).

b. Listwise N=151

Based on Table 8, the interpretation was at two things. The first was the Sig. (2-tailed) result. Based on Table 8, the Sig. (2-tailed) result showed 0.001. The result showed that there was a correlation between AI literacy and writing skill because the Sig. (2-tailed) result was less than 0.05 (0.001 < 0.05).

The second interpretation was at Pearson Correlation value. Based on Table 4, the Pearson Correlation value showed 0.366. Based on the relationship degree guidelines, the correlation between AI literacy and writing skill could be categorized as Moderate Positive Relationship. This result revealed that the students with AI literacy had better writing skill as well, so the AI literacy and writing skill of the students correlated each other in the learning process. Additionally, the results of this study also further elaborated the statistical hypotheses proposed for this study, and the hypotheses were elaborated as follows:

The first hypothesis mentioned about the relationship between AI literacy and writing skill. Based on the results of this study, the H0 was rejected, and the Ha was accepted. There was a relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar (Sig. 2-tailed result 0.001 < 0.05). The second hypothesis mentioned about the positive relationship between AI literacy and writing skill. Based on the results of this study, the H0 was rejected, and the Ha was accepted. There was a positive relationship between AI literacy and

writing skill on eleventh grade senior high students in Denpasar (Sig. 2-tailed result 0.001 < 0.05). The third hypothesis mentioned about the strength level of relationship between AI literacy and writing skill. Based on the results of this study, the H0 was rejected, and the Ha was accepted. There was a strength level of relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar (Pearson correlation coefficient (r) 0.366, and the p-value 0.001 < 0.05).

Discussion

Based on the results obtained after conducting hypothesis testing for all research questions, this study found out three findings which were : 1) there was a relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar, 2) there was a positive relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar, 3) there was a moderate positive relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar. These findings would be discussed further as follows.

A Correlation of AI literacy and Writing skill

The first result of this study found out that the AI literacy and writing skill had a correlation towards each other. This result showed that towards the students' AI literacy, their writing skill also increases along with the usages of AI tools in the learning process. This result was also related with other previous studies. The research conducted by Yetişensoy & Rapoport (2023) was correlated with the result of this study since the important of AI literacy in various of AI tools that applied into the learning process.

Additionally, this research found out that the needs of AI literacy of the students as the AI tools implemented into the English learning process. Besides, the result of this study was similar with Cetindamar et al. (2024) on their research. They found out that AI literacy had valuable meaning towards technology-related activities, as well as learning-related proficiency. The result of this study also correlated with the findings from Kong et al. (2022). This study found out that throughout AI literacy, the concept of AI which was valuable to further comprehend real-life situation also a part of it. That way, the students' AI literacy was really matter for their learning process that engaged AI tools into the learning process, especially their writing activity.

The study conducted by Eaton et al. (2018) was also related with the result of this study, where the proficiency of AI literacy was needed especially when students were going to utilize the AI tools, as well as evaluating the solutions given by AI tools, specifically on their writing skill improvement in class. That way, seeing the results of this study that that has similar results with the previous studies, the empirical implications that could be shared as the suggestions to the teachers were about the implementation of AI tools in the learning process by also highlighting the students'

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AI literacy at first. That way, the students' writing skill improvement towards AI tools utilization could get better results. For the future researchers when conducting research related with AI literacy, then it would be better to fully comprehending the AI literacy concept and comparing the theories about AI literacy nowadays since the changing technology of AI tools nowadays.

The Positive Correlation of AI literacy and Writing skill

The second result of this study found out that the AI literacy and writing skill had a positive correlation towards each other. This result showed that towards the AI literacy, the positive effect of its implementation into students' writing skill development could be more achievable. This was also viable because the implementation of AI tools into the learning process led to the needs of students' AI literacy so their writing skill could also be improved properly and supported by various of AI tools. The research conducted by Selvarasu et al. (2021) and Amin (2019) was related with the results of this study.

They found out that the students' writing activities especially in the implementation of AI tools affected their writing motivation as well. That component was important to be highlighted as well by the teachers. Additionally, the result of this study was also correlated with the research conducted by Obenza et al. (2024). This study found out that the students' AI literacy and their cognitive absorption affected each other and that also the same with this study as the writing skill of the students had positive correlation towards the AI literacy.

Moreover, this result also similar with the other previous studies such as by Long & Magerko (2020) where the needs of AI literacy nowadays had to be applied into various type of learning fields, where it would be beneficial towards the AI technology development and students' AI literacy comprehension. That way, seeing the results of this study that relevant with the previous studies, the empirical implications that could be shared as the suggestions to the teacher about the needs of implementing the AI literacy and improving the students' AI literacy when the learning design utilized the AI tools.

Especially during the students' writing activity in class, the teacher could focus not only the implementation of AI tools, but also how useful its implementation by also underlining the students' Ai literacy in class. That way, the results of this study could be relevant for the comparison results when the future researchers conducted the research about AI literacy.

The Strength Level of Correlation between AI literacy and Writing Skill

The third result of this study found out that there was a moderate positive correlation between AI literacy and writing skill. This measurement was also based on the theory of statistical power analyses by some previous researchers (Cohen, 1998; Field, 2013; Gravetter & Wallnau, 2014). This result showed that as the students' AI literacy got better, their writing skill also improved together. The

moderate positive correlation between AI literacy and writing skill highlighted the better correlation but in some parts of it has niche potential that led to moderate positive correlation.

As it is explained in the findings of the research, the moderate positive correlation means that as the students' AI literacy increases, their writing skill also increases. So, it can be the reason why the other variables such as writing skill can be improved when the students' AI literacy gets better. Although the relationship level is not perfect since it is not strong correlation, the moderate positive correlation tends to mention that it has relevant correlation that supports each other. Even though it is not perfect correlation, there might be other factors that correlates and influences both AI literacy and writing skill.

The previous studies also mentioned the moderate positive correlation as the relevant category between AI literacy and writing skill since the Pearson Correlation value showed 0.366. The result of this study also relevant with previous studies about AI literacy and writing skill. The previous studies found out that in scientific writing, the use of AI tools should not be categorized as the author too, and should be implemented, analyzed, and ethically endorsed by the human as the authors (Frangou et al., 2025).

Also, the other previous study had relevant findings about digital story writing and AI literacy, where the students applied solutions that had been given by AI into their digital story, and also raised authentic scenario for their digital story, which led to a very positive correlation between their AI literacy and the process of bridging the knowledge and solutions from AI tools into their writing skill improvements (Ng et al., 2022). Additionally, towards AI tools this was also correlated with the studies conducted by Song et al. (2024), which had found that the process of designing the AI systems with proper designs so it could fully work together alongside the daily-life of the people, and being supportive while also having proper manner systems that was applicable in various fields. This study also suggested that the needs of AI frameworks that led to the development of AI tools capabilities, and the addition of human-AI interaction to fully comprehend and adapt with human roles.

The other previous study also mentioned that related with generative AI and the user's memory, where the generative AI kept changing by days, the direct influence of the human as the user of AI tools itself should also focused on how the human in touch into the AI system especially the conversation part in generative AI systems (Hoskins, 2024). Additionally, the previous research also found out relevant findings with this study, which was about the beneficial AI tools such as Grammarly, ChatGPT, and Mendeley into the participants' comprehension towards grammatical rules and their vocabulary acquisitions in writing.

Based on the related researches previously, the results of this study supported the existing research findings and theories about AI literacy and writing skills. The empirical implication towards the teachers could be on underlining the students' AI literacy especially the ethics of AI tools, so when utilizing the AI tools into their

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English writing activities, the results of their writing skill improvement would get better results. As for the researcher, could also use the results of this finding as the data to support, strengthen, or even comparison towards the future research especially related with the AI literacy, AI tools implementation towards English language learnings, and to student's writing skill improvements.

Limitation

Several limitations should be considered when interpreting the findings of this study. First, the sample was drawn from a single school, which may limit the generalizability of the results to other educational contexts. Second, the use of self-reported questionnaire data may introduce response bias, as participants' perceptions may not fully reflect their actual abilities. In addition, this study adopted a cross-sectional correlational design. Although a moderate positive relationship was found between AI literacy and writing skill, causal relationships cannot be established; therefore, further research is needed to examine the direction of influence between the variables.

Longitudinal or experimental studies may provide deeper insights into how these variables are related. Finally, potential confounding variables were not controlled in this study. Factors such as students' general digital literacy, English proficiency level, prior exposure to AI tools, and writing experience may have influenced the observed relationship. Future research could address these factors to provide a more comprehensive understanding of the relationship between the variables.

Conclusion

This study investigated the correlation of AI literacy and writing skill on eleventh grade senior high students in Denpasar. This study was taken place in Harapan Senior High School in South Denpasar. The population of this study was the eleventh-grade senior high students in Harapan Senior High School. In this study, there were six classes of eleventh-grade senior high students as the participants, with the total of 227 students. This study implemented convenient sampling technique and found out about 151 students as the participants of this study. This study was designed using quantitative correlational study design. In conducting the study, there were two variables included which were the AI literacy and Writing skill.

In this study, the researcher implemented survey questionnaire to collect the data. The validity and reliability of the instruments were judged and analyzed using expert judgment including the content validity and reliability of the questionnaires. To collect the data of this study, the online questionnaires through Google Forms had been utilized. After the data of this study had been collected through Google Form, then the data analyzed quantitatively using Pearson product moment (Simple Correlation Analysis) in SPSS application version 27.

Based on the analysis and also hypothesis testing, the findings of this research were elaborated as follows:

1. There was a correlation between AI literacy and writing skill on eleventh grade senior high students in Denpasar.
2. There was a positive relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar.
3. There was a moderate positive relationship between AI literacy and writing skill on eleventh grade senior high students in Denpasar.

The findings of this study highlighted the moderate, positive, and significant correlation between AI literacy and writing skills. This finding also led to the relevant correlation as the positive relationship towards AI literacy and writing skill of the students. That way, the finding of this study suggested the empirical implications towards the teachers that the implementation and improvement of AI tools into English learning process had to be focused on the students' AI literacy as well. It could lead to students' comprehension towards the AI tools itself since they had understood the basic AI literacy.

Furthermore, the findings of this study also relevant for the future researchers when conducting the future researches about AI literacy, as the comparison and based data to support the needs of AI literacy implementation and improvement towards students in different kind of English language learning fields such as different skills in English. That way, the findings of this study supported the existing previous researches about AI literacy and writing skills, as well as elaborating the moderate, positive and significant correlation between AI literacy and writing skills.

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