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RELATIONSHIPS AMONG LINGUISTIC INTELLIGENCE, STUDENTS' ATTITUDES TOWARD THE USE OF ICT, AND WRITING ABILITY

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Abstract
The use of ICT (Information and Communications Technology) contributes to the achievement in EFL (English as Foreign Language) teaching and learning especially in writing performance. However, not all students have positive attitudes towards Information Technology. Besides, there is a number of factors which effects writing ability. Linguistic intelligence may be the one since it has similar characteristics with language learning. This current study is attempted to find out the relationship between students' linguistic intelligence, attitudes towards ICT use, and writing ability. It is conducted in Elementary School Teacher Education Department of Universitas Muhammadiyah Magelang, Indonesia. It involves 26 students of 6th semester as respondents. Questionnaire of Multiple Intelligence Inventory is administered to gather data of students' linguistic intelligence. Students' attitudes are also collected through questionnaire. Data regarding students' writing ability is taken from their essay writing scores. Data analysis employs Pearson Product Moment test. Statistical calculations show that partially students' linguistic intelligence has no relationship, yet students' attitudes have significant and positive relationship to writing ability. Simultaneously both variables have adequate relationship to writing ability. Hence, when linguistic intelligence and students' attitudes towards ICT use are taken into account in designing writing activities, they will probably contribute 30% from all factors.

Keywords: attitudes, ICT, intelligence, writing

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INTRODUCTION

Language plays significant roles in human development. It becomes a tool for communicating and sharing thoughts and ideas [1]. It is used by people at wide range of ages and situations. In academic settings, it is divided into four skills which are considered to be achieve as target language. One of them is writing. Students in higher education are expected to master writing skills [2] and their basics before they enter the college. They should pay much attention and efforts to learn how to analyse, synthesize and respond certain information critically. Having well-organized writing seems to be a big challenge for both native and non-native students [3]. Indeed, for most the foreign language learners, it is said to be the most challenging and difficult skills from all [4]. They are required to generate ideas, organize sentences and paragraphs, and use grammar and vocabulary accurately [5]. The content and meaning have to be paid more attention than the form.

Students have less interest in writing. Yet at their education level, it is one of the requirements which should be fulfilled [3]. Producing effective [1] and well-structured piece of essay writing [6] is one of the objectives. The communicative goals are the priorities which can be achieved through a good teaching and learning [1]. The development of their writing skills is influenced by various factors. Students' L1 writing ability, foreign language proficiency, and their writing experiences [6].

Nowadays the use of technology can be applied in academic settings. One of the purposes is to facilitate the educational practices. Studying the integration may be essential to conduct [7]. It has been an important part of classroom teaching and learning and becomes important to see how teachers use it in writing practices [8]. Computer technology have provided a great change to approaches and challenged traditional ones. Students are provided with accessible resources and writing opportunities while teachers are introduced with new tools, approaches, and strategies in language teaching and learning [4], [8]–[10]. Teachers plays their role as facilitator in encouraging students and find suitable writing activities [11] and promote students' interaction in the target language [12].

Some scholars examine the role of technology in English teaching and learning [5], [7], [10], [12], [13]. Positive attitudes of students towards use of technology were found in English language (CALL) [10], [12], [13]. It brought positive atmosphere and students felt enjoyable and convenient in their acquisition of writing skills [12]. Even though a number of students do not link the use of technology to educational purposes, they use their devices in their life for various purposes such as communicating, gaming, and listening to music [7]. Learning materials may affect learning motivation. It gives exciting self-learning method for university level students [12].

Using technological devices in the classroom is important yet teachers should consider one's characteristics. Teachers should find various methods and activities based on students' need and styles. The learning is not only for them who excel in language [14]. It is what the world views these days. The teaching and learning activities are based on their need and personal traits. In line with writing achievement, MI-based activities are considered to be more effective than traditional way in enabling students to possess writing experience [15], [16].

There are 8 intelligences [17] in which one's intelligences can begin to develop when we consider how someone experience reading and writing activities [18]. Students' motivation and learning achievement can also stimulate teachers and other learning components to lead to greater levels of achievement [19]. Some studies reveal students' intelligences as contributors of writing achievement. Intrapersonal and interpersonal intelligences are good predictors of grammar accuracy. Based on statistical calculation intrapersonal intelligence can be the predictor either [20]. A significant and positive relationship are captured between learners' ability on reasoning-gap writing task and interpersonal, logical-mathematical, and intrapersonal intelligences [21]. Generally, Multiple Intelligences can be

considered as the predictors which contribute to writing performance.

One of the intelligences is linguistic one which deals with spoken and written language. It is the ability to learn and use language in order to achieve certain goals. Those possessing this intelligence has effectively use language to express their ideas. It is attributed to writers, speakers, poets, and lawyers [14]. They will be interested in incorporating subject matters to books, poetry, stories, speeches, author visits, etc [14]. Also, it could be a predictor of students' writing achievements [22]. Some scholars attempt to explore the contributions of one's intelligence in English language learning especially in writing context [15], [16], [20], [21] however few of them deal with linguistic intelligence. Whereas the characteristics of this intelligence are quite similar and closely related to language learning context. The use of IT in EFL is raising nowadays. As explained in the previous paragraph, students now cannot be separated from IT devices in any situations. Therefore, this current study is attempted to determine the relationship among students' Linguistic Intelligence, their attitudes towards ICT use, and their writing ability. In line with it, the following questions are addressed to be answer:

Is there any relationship between students' linguistic intelligence and writing ability?

Is there any relationship between students' attitudes towards ICT use and writing ability?

Do students' linguistic intelligence and their attitudes towards ICT use simultaneously affect their writing ability?

The results of the current study will be useful to EFL teachers in designing learning activities. Students' personal traits especially dealing with linguistic intelligence and the use of ICT can be considered to be integrated as well.

RESEARCH METHOD

The current study was conducted in Elementary School Teacher Education Department of Universitas Muhammadiyah Magelang, Indonesia. 26 students of sixth semester were assigned to be respondents. Types of intelligence were captured through Multiple Intelligence Inventory adapted from Rogers' indicators. They include 80 statements formed in Likert type. It was administered to measure students' agreements and disagreements. Students' attitudes toward IT use were collected through questionnaire as well. It presents 13 statements divided into three sections: affection toward IT, intentional behaviour toward IT, and cognition toward IT [10]. The followings are score ranges of both questionnaires:

4 indicates strongly agree
3 indicates slightly agree
2 indicates disagree
1 indicates strongly disagree

Then, data dealing with writing ability were gathered from the essay writing scores. All data were statistically calculated to assume the normality and linearity. Normality test was conducted using Saphiro-Wilk Test. Pearson Product Moment was employed to analyse the data. The tests were carried out using SPSS for IBM. There are three Research Questions (RQ) and the hypotheses are presented as follows.

H_a of RQ1: there is a significant relationship between students' linguistic intelligence and writing ability

H_a of RQ2: there is a significant relationship between students' attitudes towards ICT use and writing ability

H_a of RQ3: there is a significant and simultaneous relationship between students' linguistic intelligence and their attitudes towards ICT use with their writing ability

Also, this study was attempted to know the correlation level. The ranges are used as presented in Table 1 [23].

Table 1: Correlation Levels

Correlation Value (r)	Correlation Level
0.00 – 0.199	Very Weak
0.20 – 0.399	Weak
0.40 – 0.599	Adequate
0.60 – 0.799	Strong
0.80 – 0.100	Very Strong

RESULTS AND DISCUSSION

Firstly, test of normality is carried out to all the data. If Sig. value is more than 0.05, data is assumed to be normal. Saphiro-Wilk Test reveals that they are all assumed to be normal (students' linguistic intelligence = 0.753 > 0.05), (Attitudes towards the use of ICT = 0.208 > 0.05), and (Writing Ability = 0.097 > 0.05).

Table 2: Pearson Correlations

		Attitudes toward IT	Linguistic Intelligence	Writing Ability
Attitudes toward ICT	Pearson Correlation	1	.124	.554**
	Sig. (2-tailed)		.547	.003
	N	26	26	26
Linguistic Intelligence	Pearson Correlation	.124	1	.029
	Sig. (2-tailed)	.547		.888
	N	26	26	26
Writing Ability	Pearson Correlation	.554**	.029	1
	Sig. (2-tailed)	.003	.888	
	N	26	26	26

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.555a	.309	.248	6.9216	.309	5.131	2	23	.014
a. Predictors: (Constant), Linguistic Intelligence, Attitudes toward IT									

Linearity test is also conducted in this study, relating the independent to dependent variable. F_{value} is compared to F_{table}. Linearity Tests confirm that Students' linguistic intelligence and writing ability are linear (Sig. value 0.612 > 0.05 and F_{value} 0.836 < F_{table} 2.63). Students' Attitudes toward ICT use and Writing Ability are also confirmed to be linear (Sig. Value 0.387 > 0.05 and F_{value} 1.154 < F_{table} 2.59).

Pearson Product Moment presents a statistical table as presented in Table 2. It is employs to find out partial relationships between independent and independent variables.

RQ1 deals with the relationship between students' linguistic intelligence and writing ability. It is answered by looking at Sig (2-tailed) in Table 2. It reveals that H_a is rejected (Sig (2-tailed) 0.888 > 0.05). In other words, there is no significant relationship between them. Strong linguistic intelligence does not effect on students 'writing ability. It has different view from the prior study [22] that states linguistic intelligence impacts on students' writing performance. There might be other strong intelligences possessed by the students and possibly contribute a lot to their writing ability.

RQ2 requires the answer regarding the relationship between students' attitudes towards ICT use and writing ability. Referring to Sig (2-tailed) in Table 2, there is a significant relationship (Sig (2-tailed) 0.003 < 0.05) or H_a is accepted. Also, by comparing r_{value} and r_{table}, the correlation is positive (r_{value} 0.554 > r_{table} 0.3882). Hence, it is fairly significant and positive. Good writing ability of students is indicated from strong level of attitudes towards ICT use. It supports [12] that most students use Internet, computer, TV in learning English. They have positive attitudes towards technology which can help them in their writing activities. They assume technology will assist them to search information, interesting materials, references.

Then, to examine simultaneous relationship among the variables, table of Model Summary (Table 3) taken from SPSS output is employed. RQ3 deals with relationship between students' linguistic intelligence and their attitudes towards ICT use with their writing ability. In Table 3, Sig. F_{change} is 0.014 < 0.05. Therefore, H_a is accepted or there is a simultaneous relationship between variables. Students' attitudes toward ICT use in the language learning and their linguistic intelligence simultaneously affects their writing ability. Based on Table 1, the relation is assumed to be adequate since correlation value only indicates 0.555 (Table 3).

CONCLUSION

The current study captures how linguistic intelligence, attitudes towards ICT use, and writing ability are correlated. Partially, linguistic intelligence does not have any correlation while the attitudes towards ICT use can be predictor of students' ability. Yet both variables simultaneously contribute only 30% to writing ability, the results can be taken into account to design the writing activities. They can be adjusted from characteristics of linguistic intelligence and how students use ICT in their learning. This study only involved linguistic intelligence and the writing ability was measured by essay writing scores. There are plenty of areas which could be explored regarding this research topic. Other researchers may take other intelligences or gaining writing ability scores from more structured writing tests.

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