

# The Relationship between English Ability and Linguistic Intelligence among Math Pre-Service Teachers

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Abstract: The purpose of this study to determine the correlation of English language learning results with linguistic intelligence in order to improve the academic competence of Mathematics pre-service teachers. This research is a quantitative descriptive research with sampling through purposive sampling technique. Data were collected by using questionnaire concerning linguistic intelligence and English learning result test. The results showed that there was positive correlation between English ability and linguistic intelligence among Math pre-service teachers. the statistical result shows low correlation coefficient(0.07). The findings were supported by the questionnaire result which revealed that they had limited amount of vocabulary, weak English speaking and writing skill. Overall, it can be concluded that their English-language ability did not meet the requirement of math study program academic standard. There is a need to improve their English language ability.

## 1 INTRODUCTION

There are two different views on the relationship between language learning and cognitive ability. the first group believes that special talents are needed in language learning, on the other hand, the other group believe that learning language is the same as learning to drive and others, skills that do not require natural talent (Hemmati and Sadeghi, 2015). English language skill is one of the important aspects for students to master in order to deal with the challenges of globalization era. With this in mind, prospective math teachers need to equip themselves with English ability. To meet this need, English language is delivered as an obligatory course for students in Mathematics Education Department.

Prospective math teachers are required to learn English and achieve ability in several skills namely listening speaking reading and writing. They usually find problems in learning English. This problem can be in many forms for example, their low interest and their talent to learn foreign language especially in English. Many studies have been conducted previously to find the relationship between intelligence and foreign language learning in general. Intelligence variables were strong predictors

of learning intelligence and it has been found to be strong predictors of learning (Hemmati and Sadeghi, 2015).

Several researchers investigated the types of intelligence that students use in relation to their foreign languages ability including (Shahrabi and Alavi, 2017), (Hemmati and Sadeghi, 2015), (Razmjoo, 2008), (Derakhshan and Faribi, 2015). Similar research in various countries was done to determine the relationship of multiple intelligences with foreign language skills. There is a little literature concerning English ability and linguistic intelligence in Indonesia. This research tries to fill the gap.

## 2 LITERATURE REVIEW

Multiple intelligence Theory (MIT) was developed in 1983 by Gardner. It can be classified into three major groups: analytical, introspective and interactive (Derakhshan and Faribi, 2015). The first, analytic domain includes: musical, logical, and naturalist. Second, Introspective domain covers: Intrapersonal, visual, and existential. Last, interactive domain includes: linguistic,

interpersonal, and kinaesthetic. For two decades, MIT also influences foreign language learning. It goes without saying that MIT has changed the way educators see teaching and learning foreign languages (Shahrabi and Alavi, 2017).

Linguistic intelligence is defined as proficiency in using words both in writing and speaking. People who have this intelligence are good at speaking, reading and understand books and memorizing words. Gardner and Chapman and Freeman (1996) believe that people whose linguistic intelligence is stronger have good vocabulary knowledge that equipped them for reading and understanding books. In addition they performed well in English classes (Hemmati and Sadeghi, 2015).

Furthermore Gardner explains that linguistic intelligence has something to do with sensitivity towards language both in speaking and writing. In other words, this intelligence focuses on language use to achieve educational goals as well as objectives in learning a new language. It is also defined as human capacity to use words effectively, either in speaking or writing. This implies the skill to manipulate syntax, phonology, semantics and pragmatic dimensions or the use of practical language for daily live (Armstrong, 2009) According to Gardner (1993), lawyers, public speakers, writers, and poets all have excellent linguistic intelligence (Razmjoo, 2008).

### 3 METHOD

This research method is descriptive quantitative. The main purpose of this study was to investigate the relationship between English language ability and linguistic intelligence of the students. Mathematics Education Program students in UIN Sunan Gunung Djati Bandung were the population of the study. The samples in this study were 33 students. They had taken the English language courses and their number were 22 students from 5th semesters and 11 students from 7th semester. Sampling was done using purposive sampling technique. The research instrument used in this research was test and questionnaire. The test in question is a test of English learning result which included mid-test, Quiz, Task and final test. While the questionnaire used was a questionnaire of linguistic intelligence consisting of 10 statements with four options were available namely: strongly agree, agree, disagree, and strongly disagree.

### 4 FINDINGS AND DISCUSSION

The purpose of this study is to determine the correlation of English language learning results with linguistic intelligence in order to improve the academic competence of Mathematics pre-service teachers. Prior to conducting correlation test between English learning results with linguistic intelligence, this study first tested the assumptions by measuring data normality test. Lilliefors method was used and it revealed a significance level of 5%. The result of normality test can be seen in Table 1.

Table 1: Summary of Data Normality Test

Data	L <sub>Observasi</sub>	L <sub>Kritik</sub>	Decision	Distribution
English Learning	0.1463	0.1542	Ho Accepted	Normal

From Table 1, it is found that English learning result and linguistic intelligence result belonged to normal distribution, then correlation test was done by using Product Moment correlation.

The correlation test used was Product Moment correlation test because both data were normally distributed. The result of correlation test analysis between English learning results with linguistic intelligence has positive correlation. A summary of the correlation test using SPSS software is presented in the following table:

Table 2: Summary of Correlation Test

		English Score	Questionnaire Score
English Score	Pearson Correlation	1	0,071
	Sig. (2-tailed)		0,693
	N	33	33
Questionnaire Score	Pearson Correlation	0,071	1
	Sig. (2-tailed)	0,693	
	N	33	33

The data in table 2 is obtained from the correlation coefficient is 0.071, which means the results of English learning is positively correlated with linguistic intelligence with very low correlation coefficient interpretation. This was supported by the findings from questionnaire.

It was found that the average student of Mathematics Education Program has a limited size of vocabulary, low speaking and writing skill.

Razmjoo's study showed that there was no significant relationship between language skills

and multiple intelligences, and language skills with the nine types of intelligence, including linguistic intelligence (Razmjoo, 2008). Other studies concluded that no significant differences were found between Multiple Intelligences and successful teaching activity (Pishghadam, R; Moafiun, 2008). The linguistic intelligence of the students of Mathematics Education Program was investigated using questionnaire which was adapted from Howard Gardner's MI Model. The result of questionnaire can be seen in the following table:

Table 3: Questionnaire result on Students' Linguistic Intelligence

No.	Indicator	Mean
1.	I love reading books	3.64
2.	I have a good memory for names, places, lyrics, and other things	3.39
3.	I love to listen to stories on the radio or discuss books	3.79
4.	I love word play and crosswords	3.76
5.	I have a good vocabulary for my age	2.82
6.	I say the words accurately	3.03
7.	I love telling stories, jokes, or other stories	3.91
8.	I love going to libraries and bookstores	3.18
9.	I am a good liar (if I want to be)	1.91
10.	I'm a good writer	2.55
Average Linguistic Intelligence		3.20

Based on the above table, it is known that their average score is 3.52, meaning they fall within good category. Overall it can be concluded that their English ability can be categorized enough. Their English ability average is 68 and this can be classified enough category. However, this condition has not fulfilled the academic standard of Math study program, and they need to be further improved.

Efforts to improve their English ability can be tried by increasing their activity that involves linguistic intelligence in learning. The activities to stimulate their English can be in forms of reading activities, writing important terms and vocabularies what they are reading; expressing orally their understanding on topic they are learning and writing resumes.

Linguistic intelligence can be boosted by providing several activities like: exercises to acquire and uses the pedagogical and methodological vocabulary; debate activity; oral and written communication; essay writing about the teaching

experience; and literary works reading. These activities may illustrate the relationship between student and teacher (Constantinescu, 2014).

## 5 CONCLUSIONS

Based on the findings and discussion above, it can be concluded that there is a positive correlation between linguistic intelligence and students' English proficiency. This shows that the linguistic intelligence strongly correlates with English language ability. It is suggested that students' linguistic intelligence needs to be upgraded in order to improve their English ability. Possible program and activities need to be offered to boost their linguistic intelligence.

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