DESIGNING MULTIPLE INTELLIGENCES-BASED INSTRUCTIONS TO IMPROVE STUDENTS' SPEAKING PERFORMANCE FOR AVIATION STUDENTS

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The present study aimed at investigating whether or not there is a statistically significant effect of designed multiple intelligences-based instructions on students' speaking performance, exploring the aspect of speaking that can significantly improve through it and finding the dominant inventory of students' intelligence that affected more. Speaking tests, questionnaires, and observation were used to collect the data. The instruments of the reseach were valid and realible. They were constructed based on Armstrong's Multiple Intteligences (2009) and Harris' Speaking(1969) theory. The results showed that there was a statistically significant effect of designed multiple intelligences-based instructions on students' speaking performance. In term of the dominant inventory of students' intelligence it revealed that students who have linguistics intelligence dominant was the highest intelligence that affected on students' speaking performance.

Keywords: *Instruction, multiple intelligences, speaking performance.*

Penelitian ini bertujuan untuk menyelidiki apakah ada atau tidak ada pengaruh yang signifikan secara statistik dari beberapa instruksi berbasis kecerdasan majemuk berdasarkan pada kinerja berbicara siswa. Selain itu, ini bertujuan untuk menyelidiki aspek berbicara yang dapat secara signifikan meningkat melalui beberapa instruksi berbasis kecerdasan majemuk. Selanjutnya, ini juga bertujuan untuk menyelidiki inventarisasi kecerdasan siswa yang dominan yang mempengaruhi lebih banyak melalui serangkaian instruksi berbasis kecerdasan majemuk. Tes berbicara, kuesioner, dan observasi digunakan untuk mengumpulkan data. Instrumen tersebut telah dinyatakan valid dan reliabel dikarenakan telah sesuai dengan teori multiple intelligences oleh Armstrong (2009) dan Harris (1969). Hasil penelitian menunjukkan bahwa ada pengaruh signifikan secara statistik dari beberapa instruksi berbasis kecerdasan majemuk pada kinerja berbicara siswa. Dalam hal inventarisasi dominan kecerdasan siswa, terungkap bahwa siswa yang memiliki kecerdasan linguistik yang dominan adalah kecerdasan tertinggi yang mempengaruhi kinerja berbicara siswa.

Kata kunci: *Instruksi, kecerdasan majemuk, kinerja berbicara.*

INTRODUCTION

Speaking is the target skill in both first and foreign languages. Speaking skills play a vital role in communication process. It is the most important type from the types of linguistic activities. According to Thornbury (2005), there are two main purposes for speaking. Speaking serves either as transactional function, in that its primary purpose is to convey information and facilitate the exchange of goods or services, or is to establish and maintain social relations.

Today, the rapid development especially in the Airline industry demands skillful aviation staffs, such as ground staff in the airport who can communicate well. The term skilfull here does refers to not only being skillful in performing their jobs but also competent in communication. Regan (1997) stated that a greater awareness of the nature of aviation English and of relevant resources can assist those aviation professionals whose daily work depends significantly of the use of language. In other word, a professional aviation staff is someone who can do his/her best when facing and solving every problem that may occur in his/her job descriptions in the aviation environment such as handling passangers that come from domestic and international flight and servicing passangers from departure until arrival.

Therefore, to perform best service in the airport, a profesional aviation staff is required to have good communication ability with all component members and passangers.

Aviation staffs, especially, those who work in the international routes usually meet passengers from all over the world and commonly they use English to communicate. Therefore, aviation staffs must be competent in English language, so, they can communicate in every possible situations which might happen during their flight-duty and off-duty.

Thus, before aviation staffs come to the real work, they have to join some learning process conducted by Aviation Training Centre and learn how to speak English well. One of the most important process is English for communication training. When they join in the aviation training center, they have precious moments to practice and maximize their English. In this case, by using contextual materials, suitable methods and good instructions, the outcomes of the English for communication training is aimed at students' English mastery.

Reinforced by the observation of ICAO (International Civil Aviation Organization, 2009), language proficiency requirements apply in achieving and maintaining proficiency in all languages used in radiotelephony communications. However, as English is the language most widely used in common by the global aviation community, and the one which there is a requirement to provide, it is in improving levels of spoken English that the community's main focus currently lies. Thus, the aviation students have to promote their ability in speaking English as the requirements to become a professional aviation staff in the airline company because English is

one of the main language for communication in the airline industry.

Therefore, researcher try to find out the information from many resources and find the important concept. This concept has been put forward and explored to a large extent in order to explain the individual differences and to modify the learning environments according to these differences. The concept is multiple intelligences theory that proposed by Gardner, he suggested that intelligence has more to do with the capacity for solving problems and fashioning product in a context-rich and naturalistic setting (Armstrong, 2009).

Established the effectiveness of multiple intelligences theory, previous studies have investigated the effect of using multiple intelligences and speaking performance. One of these studies was conducted by Saibani, Bahar, and Simin, Shahla (2015) investigated the relationship between multiple intelligence and speaking skill among intermidiate EFL learners in Bandar Abbas Azad University in Iran, this research was conducted to identify the relationship between multiple intelligences and speaking ability among Iranian EFL learners as well as the effect of gender on the relationship. The findings revealed that there is significant relationship between multiple intelligences and speaking ability. In addition, according to the multiple regression analysis it was shown that linguistic-verbal (both males and females), interpersonal (in males) and intrapersonal intelligence (in males) are main predictors of

speaking ability. Furthermore, it is shown that there is no significant difference between speaking ability of males and females. In addition, Salem (2013) investigated the impact of multiple intelligences-based instruction on developing speaking skills of the pre-service teachers of English.

Although, previous studies have investigated dealing with the mater, more studies about multiple intelligences-based instructions to improve students' speaking performance is needed to investigate more for explaining the effect of students' speaking performance through multiple intelligences-based instructions in the classroom activities, especially teaching speaking for specific purposes in the aviation area.

Therefore, the researcher proposed the procedure of teaching speaking through multiple intelligences-based instructions to improve students' speaking performance for aviation students, the researcher tough these problems related to multiple intelligence that firstly proposed by Professor Howard Gardner from Harvard University in the 1980's, the intelligence consists of linguistic, mathematic, musical, spacial, bodily-kinaesthetic, interpersonal, intrapersonal, naturalist and existential.

However, the researcher focus on five intelligences, those are linguistic intelligence, visual-spacial intelligence, bodily-kinaesthetic

intelligence, intrapersonal intelligence and interpersonal intelligence. Researcher believed that multiple intelligences have correlation in speaking activities in the classroom. It is considered by

Being inspired by the idea of multiple intelligences-based instructions on students' speaking performance, the researcher try to modify the teaching procedures through designed multiple intelligences-based instructions and the ultimate goal of this research is focused on communicative learning activities to improve students' speaking performance through intelligences frame work (Armstrong, 2009). Therefore, the researcher proposed the stage of teaching English especially for English Specific Purposes through multiple intelligences-based instructions and lesson plan design that related to the syllabus of Aviation Programme 2017/2018 and the frame work of intelligences into activities in the classroom.

To know whether the designed multiple intelligences-based instructions is able to improve students' speaking performance the researcher conducted a study with the following proposed research questions: (1) Do the designed multiple intelligences-based instructions improve students' speaking performance? (2) Which aspect of speaking performance did multiple intelligences-based instructions statistically significant improved? (3) Which intelligence dominant of students' multiple intelligences significantly affected the students 'speaking performance?

the observation and the previous studies. Then, to know students' dominant intelligence of multiple intelligence, researcher used the twenty questioner items that adapted from Armstrong (2009).

METHODS

The present study used quantitative design. In quantitative design, this research used one group pretest-posttest design. This research was conducted to 30 students of Ground Staff Program from Crew of Aviation Training Lampung Batch XXVII / 2017.

The data of the research should be valid and reliable. As Setiyadi (2006) stated that the validity of an instrument was measured what should be measured. To collect the data, the researcher administered speaking tests (pretest and posttest) and questionnaire. In this research, it was related to pre-test and post-test of speaking instrument. The materials chosen were based on the materials proposed by the syllabus of Crew Aviation Training (CAT) Lampung 2017.

In this research, the construction of items in speaking performance in Likert scale was done by employing the aspects of speaking that adapted by Harris (1969). The validity of the questionnaire students' preference inventory of multiple intelligence adapted from Armstrong (2009). The construction of items in students' preference inventory was done by employing the inventory of intelligence that consist of 20 items that adapted from Armstrong (2009), students were asked to choose one

answer by giving check list in the table, based on their intelligences' preference. The answer consist of

four choices (1=disagree, 2=just so-so, 3=agree, 4=strongly agree).

Reliability of the test was defined as the extent to which a test produces consistent result. The researcher used inter-rater to see the reliability of the raters in determining the speaking performance which was affected by the treatment. In order to see the coefficient of the reliability, the researcher employed the formula of coefficient correlation. It was found that the result of rk= 1, it means the score given by the raters test fulfilled the criteria of reliability to support the data before and after process of the training. The questionnaire was

valid due to full fill the content validity in statistical data and proven by statistical data. In this case, the reseacher used Cronbach's Alpha to check whether the questionnaire was valid or not.

After the data needed were collected, they were coded and counted in terms of comprehension, vocabulary, pronunciation, fluency, grammar. To analyze students' speaking test, the researcher used Repeated Measure T-test computed through IBM SPSS Statistics 15.

RESULTS AND DISCUSSIONS

To answer the first research question, the researcher compared results of speaking pre test and post test. The results were as follows.

Table 1: The Paired-Sample Test of Students' Speaking Performance

Paired Samples Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	Df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Posttest - Pretest	2.4833	1.0787	.1969	2.0806	2.8861	12.610	29	.000

The paired-sample test table of students' speaking performance in term of designing multiple intelligences-based instructions was notified the mean score about 2.4833 with 1.0787 standard deviation and based on the table above, the sig. (p) value earned through SPSS is 0.000.

Meanwhile, the significant level used in this research is 0.05. The

hypothesis acceptance criteria is if sig. (p) value is less than sig. level, it means that Ho is rejected. Furthermore, it is notified that sig. (p) value (0.000) is less than sig. level (0.05). Hence, in other words, it was revealed that there was difference achievement between pretest and posttest achievement.

To answer the second research question, the researcher compared result of each speaking's aspect as follows.

Table 2: Independent T-Test of Speaking Performance Aspects

Descriptive

Score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	30	3.50	.630	.115	3.26	3.74	2	4
2	30	3.10	.712	.130	2.83	3.37	2	4
3	30	3.38	.625	.114	3.15	3.62	2	4
4	30	2.30	.551	.101	2.09	2.51	2	3
5	30	2.48	.533	.097	2.28	2.68	2	4
Total	150	2.95	.774	.063	2.83	3.08	2	4

Note:
1 = Comprehension
2 = Pronunciation
3 = Vocabulary
4 = Fluency
5 = Grammar

Based on independent T-test of speaking performance aspects, the mean students' speaking score for comprehension is 3.50, pronunciation is 3.10, vocabulary is 3.38, fluency is 2.30, and grammar is 2.48.

The table was notified that comprehension was the most affected by designed multiple intelligences-based instructions and followed by vocabulary, pronunciation, grammar and the last was fluency. Therefore, the highest aspect of speaking performance that was affected by designed multiple intelligences-based instructions was comprehension.

Furthermore, to answer the third question, researcher used descriptive statistic of speaking performance among Intelligences, as table below:

Table 3: Multiple Comparisons of Students' Dominance Inventory of Multiple Intelligences effected by Designed Multiple Intelligences-Based Instructions

Descriptive

Posttest

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max	Between-Component Variance
						Lower Bound	Upper Bound			
	1	6	15.417	1.4289	.5833	13.917	16.916	13.0	17.0	
	2	6	13.667	3.2813	1.3396	10.223	17.110	9.0	17.5	
	3	5	15.100	3.1898	1.4265	11.139	19.061	10.5	17.5	
	4	5	15.300	2.3611	1.0559	12.368	18.232	11.5	18.0	
	5	8	14.563	2.8213	.9975	12.204	16.921	11.0	18.0	
Total		30	14.767	2.5922	.4733	13.799	15.735	9.0	18.0	
Model	Fixed Effects			2.7038	.4936	13.750	15.783			
	Random Effects				.4936[a]	13.396[a]	16.137[a]			-.7200

Note:
1 = Linguistic Intelligence
2 = Visual Intelligence
3 = Bodily-Kinesthetic Intelligence
4 = Interpersonal Intelligence
5 = Intrapersonal Intelligence

Table 3 was presented independent T-test of speaking performance, it was notified the mean students' speaking score for students with linguistic dominance inventory is 15.417, the mean students' speaking score for students with visual dominance inventory is 13.667, the mean students' speaking score for students with bodily kinesthetic dominance inventory is 15.100, the mean students' speaking score for students with interpersonal dominance inventory is 15.300 and the mean students' speaking score for students with intrapersonal dominance inventory is 14.563.

The table above was represented that students' who have linguistics dominance inventory was the highest intelligence that affected by designed multiple intelligences-based instructions followed by interpersonal intelligence, bodily kinesthetic intelligence, intrapersonal intelligence and the last was visual intelligence. Therefore, researcher

concluded that the dominant inventory of students' intelligence that affected on students' speaking performance by designed multiple intelligences-based instructions was linguistic intelligence.

The results revealed that designed multiple intelligences-based instructions had a positive effect on students' speaking performance as there were statistically significant differences between pre and post administration of the test. Based on the finding that represented, it was showed the differences data achievement between pretest and posttest. From the data result, it can be concluded that designed multiple intelligences-based instructions was improved students' speaking performance.

This finding is in line with previous studies, Sayed (2005) who investigated the effect of using multiple intelligences-based training program on developing first-year English students' oral communication skills. A training program based on Gardner's multiple intelligences theory to develop the students' oral communication skills, and an oral communication pre-posttest that was administered to the group of the study before and after their training were utilized as the tools of the study. Results revealed that the program had a positive effect on the students' oral communication skills as there were statistically significant differences between the pre and post administration of the test.

In addition, it was revealed that comprehension was the highest aspect that affected by designed multiple intelligences-based instructions and followed by vocabulary as the second, pronunciation as the third, grammar as the fourth and the last was fluency. Reinforced by the finding, it was concluded that the highest aspect of speaking performance that affected most by designed multiple intelligences-based instructions is comprehension.

Based on the finding after the treatment taught, researcher assumed that the students were able to carry out their speaking performance because influenced by extra linguistic. Researcher assumed, students developed their extra linguistic knowledge because the content in the interview test was related to the topic, contextually and familiarity with the speakers in term of socio-cultural knowledge. Context knowledge allows them to develop reference related to the topic. The knowledge of social values and norms of behavior in a given society was help them to increase their speaking contents. It was supported by Thornbury (2005), he states that there are two components involved in speaking performance namely extra linguistic knowledge and linguistic knowledge.

Therefore, researcher assumed that the students' performance was identified by their ability to perform their speaking ability. As part of natural life, they have to improve their speaking performance in second or foreign language by applying some aspects that have been stated above. Therefore Harris (1969) states that there were some language components namely comprehension, vocabulary, grammar, pronunciation

and fluency to be assessed in speaking achievement.

Moreover, result of this present study inferred that students who have the highest linguistic intelligence was affected on their speaking performance effectively. Researcher assumed linguistic intelligence was influenced their speaking performance. In fact, they was knew how to communicate well although they got some mistakes and they felt self-confident when they said something.

Researcher believed, there was significant relationship between linguistic intelligence and speaking performance, it was showed that linguistic-verbal was the main predictor of speaking performance by designed multiple intelligences-based instructions briefly considered

how the verbal linguistic intelligence involved in foreign/second language learning process. Researchers' assumption was supported by Saibani, Bahar, and Simin, Shahla (2015) who investigated the relationship between multiple intelligence and speaking skill among intermediate EFL learners in Bandar Abbas Azad University in Iran. The findings revealed that there was significant relationship between multiple intelligences and speaking ability. Then, according to the multiple regression analysis it was shown that linguistic-verbal (both males and females), interpersonal (in males) and intrapersonal intelligence (in males) are main predictors of speaking ability. Furthermore, it is shown that there is no significant difference between speaking ability of males and females.

CONCLUSION AND SUGGESTIONS
In line with the results and discussions above, the researcher draws the conclusions as follows: (1) since class room activity which is considered the students' intelligences designed multiple intelligences-based instructions can improve students' speaking performance effectively and has a positive effect on student's speaking performance.

(2) Language seemed to be not the problem to the students in term of comprehension because students understood the interviews' questions and they knew how to answer. Some students who had enough knowledge of comprehension seemed to have little difficulty in explaining their ideas and they used appropriate

speech act and discourse to convey the ideas. It is in line with the result of this study which showed that comprehension was the most aspect improved by designed multiple intelligences-based instructions.

(3) Based on independent t-test of speaking performance, students with the highest linguistic intelligence was the most affected by designed multiple intelligences-based instructions. From the finding above, researcher concluded that students who have the highest linguistic intelligence affected their speaking performance effectively because they have basic skill in speaking performance and they knew how to communicate well even they got mistakes but they are confident to express their ideas. It was shown that

linguistic intelligence is main predictor of speaking performance because in preparing designed multiple intelligences-based instructions the researcher briefly considered how the linguistic intelligence involved in foreign/second language supported by the other intelligence frame works.

By considering the conclusions above, the researcher proposes some suggestions as follows: (1) it is recommended to further researcher to use big sample size and find the detail procedure in teaching English through multiple intelligences–based instructions to improve students' skills in qualitatively. 2) In order to meet the requirement, teachers have to be aware with the variety of intelligences to make different activities more effectively and teachers are widely suggested to focus not only on improving speaking but also writing, reading and listening in order to communicate properly in the right situation especially in school context.

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