

THE EFFECT OF SCIENTIFIC APPROACH ON SPEAKING COMPETENCY AND ITS RELATIONSHIP TO ACHIEVEMENT MOTIVATION

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ABSTRACT

This experimental study aims at investigating the effect of scientific approach and achievement motivation upon speaking competency of ninth graders of SMP Pancasila Cangu in the academic year 2017/2018. This research applied 2x2 factorial design. Sixty students were selected as sample through random sampling. Data of students' speaking and achievement motivation were collected by using multiple choice tests. The acquired data were analyzed statistically by Two Way Analysis of Variance (Two Way ANOVA) and Tukey test to know the interaction effect at 5% significance level. This research discovered that 1) Scientific Approach affects significantly on students' speaking competency, 2) there is a significant interaction effect of teaching strategy and achievement motivation on students speaking competency, 3) Scientific Approach affects significantly on the high motivation students' speaking competency, and 4) Conventional Strategy affects significantly on the low motivation students' speaking competency.

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1. Introduction

Communication is an act or instance of transmitting or a process whereby we attempt to transmit our thought, ideas, wishes, or emotions to others. The power of communication and global networks are the keys which lead the people to compete in global chance. Language is not only a means of communication but also a medium to share and to express ourselves. As an international language, English is a medium of interaction and communication among people from different parts of the world. Being competent in English is now becoming one of the essential needs. The four language skills, namely listening, speaking, reading, and writing are used for practical purposes, as a medium to convey meanings and ideas. Those abilities must be seen as a whole ability because they are integrated each other.

In the field of language teaching, the newest curriculum, which is known as "Kurikulum 2013", explicitly states that teaching English focuses in integrated skills of four language skills namely listening, speaking, reading, and writing. The other language components such as pronunciation, grammar, and vocabulary are also taught to support language skills' development. These skills are taught in an integrated way because one skill cannot be performed without the others. In addition, from everyday experience, oral and written languages are used together. It is likely listening may precede speaking and reading may precede writing. For instance, it is impossible to engage conversation if someone is not listening and there is possibility when someone reads an article he or she will have a small discussion or give comment on it. In another case, someone may write a report after reading some articles. From these things, teaching those four skills in an integrated way will enable the students to use the language communicatively.

According to Nunan (2003), teaching speaking is about how to use the language quickly and confidently with few natural pauses, called as fluency. Teaching speaking is important because speaking reinforces the use of organization thought in meaningful logical science, the use of appropriate words based on the situation, grammar and the use of intonation, word stress. Due the facts above, we can see clearly the overall objectives of teaching speaking are in order to enable the students to express their ideas and thoughts in an oral form.

Cutting (2000:27) states that speaking also can be used as a means of revealing speakers' personality, attitude, nationality, religion, etc. Speaking is the most basic medium of communication by humans. It is the only basic human right that has the least restrictions and considered highly important. Speaking is the process of building and sharing meaning through the use of verbal and non-verbal symbols, in a variety of contexts (Celce, 2001: p. 13). This definition shows us how language and speaking could not be separated each other. Language consists of verbal and nonverbal symbols; and in speaking, language is used as a means of building and sharing meaning in an interaction.

Moreover, language learning has central role in students' intellectual, social, and emotional development and becomes key element of success in learning other disciplines. Language learning is expected to help learners to understand themselves, their culture and the other cultures. Besides, language learning also helps learners to express their ideas, opinion, and feeling, take part in social interaction, discover and use their analytical and imaginative thinking (BSNP, 2006; 111). For foreign language teaching, the goal of a language teaching is mainly to enable students to communicate in the target language. The goal of language teaching is not only for mere mastering the structure of the target language but also for developing communicative competency. Communicative competency is the ability to understand and produce oral or written sentence which is used in daily life communication.

Based on observation conducted in SMP Pancasila, it was found that the students faced difficulties in speaking. The students were more often to use language in oral form but most of them thought that speaking was difficult. It was proven by the mean score of the students acquired in the mid semester test which was below the passing grade established by the school (the passing grade is 75). Based on the data of mid semester test, which most focused on speaking test, it was acquired that the mean score of class IX A was 72.2, IX B was 70.6, and IX C was 70.4. This score was far from the expectation. Most of the students were found to get low score in this subject.

In a relation to the above problem, it seems that the existence of an approach can help the students to guide them step by step thinking of their ideas before they try to speak or say something. Scientific approach is an approach that contains five steps namely observing, questioning, associating, experimenting, and communicating. According to Longman Dictionary (2013), scientific approach is defined as the usual process of finding out information in science, which involves testing your ideas by performing experiments and making decision based on the result. Scientific approach in education provides the students with five important steps such as observing, questioning, associating, experimenting, and communicating.

Related to scientific approach that provides chance for the students to learn step by step and look at the progression of information or ideas in their speaking to reach excellent standard of the goal, it can be said that scientific approach can enhance students' motivation in learning.

Furthermore, Marhaeni (2005) states that achievement motivation is built from the readiness of individuals to receive new things. In this case, those new things are feedback given by the students' themselves, guidance from their peers, and the teachers along learning process. Students having high motivation will maximize that feedback to improve their achievement and reach their excellent goal in learning.

To sum up, there are two things which are said to have a great influence on students' speaking achievement namely: an approach and motivation of the students in learning English. Therefore in this research, scientific approach which may enhance students' motivation and achievement motivation as one of several motives in human lives are further investigated. Specifically, this research aims to find evidences on whether the implementation of scientific approach and students' achievement motivation could give a significant effect on the students' speaking achievement. The research was conducted in speaking class of ninth year students of SMP Pancasila in Academic Year 2017/2018. Based on the previous explanation about scientific approach, motivation and speaking achievement, the problems arose in this study were:

1. Is there any significant effect in speaking competence between the students who are taught by using Scientific Approach and those are taught by Conventional approach?
2. Is there any interaction effect between teaching approach and achievement motivation on speaking competency?
3. Is there any significant effect in students' speaking competency who have high motivation by using scientific approach and conventional approach?
4. Is there any significant difference in students' speaking competency who have low motivation taught by using scientific approach and conventional approach?

2. Methods

To administer this research, Posttest Only Control Group with 2x2 factorial design was applied. Sixty ninth-graders of SMP Pancasila Canggus were selected as the sample through random sampling. By taking lottery, IX A class was assigned as the experimental group and IX C class was assigned as the control group. The experimental group was taught by using Scientific Approach and the control group was taught by using Conventional technique. Then, achievement motivation test was then distributed to measure the students' motivation level. Then, student's achievement motivation level was classified into high and low by Anastasy formula. 33% of the students who got highest score were categorized into the students having high motivation and 33% of the students who got lowest score were categorized into the students having low motivation. Treatment was done for 12 meetings followed by posttest. The data analysis involved descriptive and inferential analysis. Descriptive analysis aimed at describing the data by measuring mean. Meanwhile, inferential analysis was to test the hypothesis. Inferential analysis was done by using Two-Way ANOVA and Tukey Tests

3. Findings and Discussion

Based on two-way ANOVA and post hoc testing, the findings were as follows:

The first finding showed, the value of FA was 388.774 while Fcv (1;48;0.01) was 6.302. Since FA higher than Fcv, then H0 (1) which stated "there is no significant effect on students' speaking achievement between the students taught by using Scientific Approach and conventional technique", was rejected. It means that H1 (1) which stated "there is a significant effect in students' speaking achievement between the students taught by using scientific approach and conventional approach", was accepted. It can be concluded that there is a significant effect on students' speaking achievement between students taught by using scientific and conventional approach, where the mean score of students taught by scientific approach was 83.5256, higher than the mean score of students' speaking achievement for students taught by using conventional technique which was about 73.2906.

The second finding showed the value of FAB on interactional effect was 17.976 while Fcv (1;48;0.01) was 6.302. Since FAB was higher than Fcv, it means that the null hypothesis H0 (2) which stated "there is no significant interactional effect and students' achievement motivation towards the students' speaking achievement", was rejected. It means that the alternative hypothesis H1 (2) which stated "there is a significant interactional effect between scientific approach and conventional approach and students' achievement motivation towards the students' speaking achievement", was accepted. So it can be concluded that there is a significant interactional effect between scientific approach and conventional approach and students' achievement motivation towards the students' speaking achievement.

The third finding showed the Qob was 11.508496. The Q critical value should be based on three things, they are the level of significant (α), the number of means (t), and the df within that can be seen in anova table (q). For this study, the Q critical value should be Q with t=4 and df=48. However since the Q table did not provide 48 degree of freedom, then 60 degree of freedom was used. From the Q table, the Qcv (4;60;0.05) was 3.74 and the Qcv (4;60;0.01) was 4.59. This means the Qob was higher than the Qcv in both 0.05 and 0.01 level of significance, so H0 was rejected. Therefore, it can be concluded that there was a significant difference between the students with high achievement motivation taught by using scientific approach and conventional approach. The students with high achievement motivation taught by using scientific approach technique (X=87.051308) showed higher achievement than those with conventional achievement (X=74.615385).

The fourth finding showed the Qob was 7.4350663. The Q critical value should be based on three things, they are the level of significant (α), the number of means (t), and the df within that can be seen in anova table (q). For this study the Q critical value should be Q with t=43 and df=56. However since the Q table did not provide 56 degree of freedom, then 60 degree of freedom was used. From the Q table, the Qcv (4;60;0.05) was 3.74 and the Qcv (4;60;0.01) was 4.59. This means the Qob was higher than the Qcv in both 0.05 and 0.01 level of significance, so H0 was rejected. Therefore, it can be concluded that there was a significant difference between the students with low achievement motivation taught by using scientific approach and conventional approach. The students with low achievement motivation taught by using scientific approach technique (X=80) showed higher achievement than those with conventional achievement (X=71.965769).

The fifth finding showed the Qob was 6.5254464. The Q critical value should be based on three things, they are the level of significant (α), the number of means (t), and the df within that can be seen in

anova table (q). For this study the Q critical value should be Q with $t=43$ and $df=56$. However since the Q table did not provide 56 degree of freedom, then 60 degree of freedom was used. From the Q table, the $Q_{cv}(4;60;0.05)$ was 3.74 and the $Q_{cv}(4;60;0.01)$ was 4.59. This means the Q_{ob} was higher than the Q_{cv} in both 0.05 and 0.01 level of significance, so H_0 was rejected. Therefore, it can be concluded that there was a significant difference between the students with high achievement motivation and the students with low achievement motivation taught by using scientific approach. The students with high achievement motivation taught by using scientific approach ($X=87.051308$) showed higher achievement than the students with low achievement motivation taught by using scientific approach ($X=80$).

The sixth finding showed the Q_{ob} was 7.531. The Q critical value should be based on three things, they are the level of significant (α), the number of means (t), and the df within that can be seen in anova table (q). For this study the Q critical value should be Q with $t=43$ and $df=56$. However, since the Q table did not provide 56 degree of freedom, then 60 degree of freedom was used. From the Q table, the $Q_{cv}(4;60;0.05)$ was 3.74 and the $Q_{cv}(4;60;0.01)$ was 4.59. This means the Q_{ob} was higher than the Q_{cv} in both 0.05 and 0.01 level of significance, so H_0 was rejected. Therefore, it can be concluded that there was a significant difference between the students with high achievement motivation and the students with low achievement motivation taught by using conventional technique. The students with high achievement motivation taught by using scientific approach ($X=74.615385$) showed higher achievement than the students with high achievement motivation by scientific approach ($X=71.965769$).

The high English achievement was shown by the group of students with high achievement motivation taught by using scientific approach.

The conventional technique does not provide chance for the students to look at the progression of information or ideas in their writing to form coherent writing as it can be found in scientific approach.

The students with low achievement motivation, on the other hand will be discouraged to have good process in speaking. It means that the students with low achievement motivation will never try the best effort to make the best achievement. The low achievement motivated students need to be stimulated by the interesting technique. In fact, the conventional technique does not really give an interesting atmosphere of learning. Therefore, the scientific approach gives more benefit to the students with low achievement motivation rather than those who were taught by using conventional technique.

In another point, achievement motivation is a drive to reach excellent standard. High achievement motivated students like new and challenging things. Moreover, they usually set goal of their task in learning. Therefore, high achievement motivated students need new things (e.i. feedback) as the reflection of their progress to reach goals.

At the end, it can be concluded that activity develops well through scientific approach. The students who have high achievement motivation can reach optimum speaking achievement if they are taught by using scientific approach.

4. Conclusion

Based on the explanation and the result of data analysis, it can be concluded that 1) Scientific Approach affects significantly on students' speaking competency, 2) there is a significant interaction effect of teaching strategy and motivation on students speaking competency, 3) Scientific Approach affects significantly on the high motivation students' speaking competency, and 4) Conventional Strategy affects significantly on the low motivation students' speaking competency. Generally, scientific approach has brought positive effect on students' speaking competency.

Furthermore, several suggestions are drawn for three parties, namely: teacher, students, and other researchers. For the teacher, three suggestions can be made. First, Scientific Approach should be used in teaching speaking as an alternative strategy to solve problems of students' low speaking competency. It is suggested since Scientific Approach affects better on students' speaking competency. Second, since achievement motivation has significant role in affecting students' speaking competency, it is suggested that the teacher should do their best to increase their students' achievement motivation. If low motivation students were found, the teacher should direct them to improve their motivation through certain ways. Third, in implementing Scientific Approach, achievement motivation should also be taken into account. As being found that the students having high motivation taught with Scientific Approach have higher speaking competency than those taught with Conventional Approach.

For the students, it is suggested that during the implementation of Scientific Approach, the students are expected to follow each steps seriously because all the steps can influence their speaking competency. Furthermore, it is suggested that he students should change their learning paradigm which focus on

individual and passive learning. They have to open their mind that learning is more fun to be done in collaborative and cooperative ways.

Finally, the other researchers are suggested to study the implementation of Scientific Approach on other language skills. In addition, the other researchers are also suggested to use other variables as moderator variable in researching Scientific Approach, for examples: anxiety, self-concept, creativity, and self-reflection.

The high English achievement was shown by the group of students with high achievement motivation taught by using scientific approach. The conventional technique does not provide chance for the students look at the progression of information or ideas in their writing to form coherent writing as it can be found in scientific approach.

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