

A Comparative Study on Teaching ESP Writing Using Inductive and Deductive Method in Balikpapan State Polytechnic

Elisabeth Milaningrum^{1*}

¹ Politeknik Negeri Balikpapan

*elisabeth.milaningrum@poltekba.ac.id

Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui perbedaan significant kemampuan menulis mahasiswa Politeknik Negeri Balikpapan yang diajar menggunakan metode deduktif dan induktif dan juga mengetahui kelompok mana yang memiliki kemampuan menulis lebih baik , yakni kelompok yang diajarkan dengan metode deduktif atau kelompok yang menggunakan induktif. Metode penelitian yang digunakan adalah metode experimental. Populasi dalam penelitian ini adalah mahasiswa semester tiga jurusan teknik mesin Politeknik Negeri Balikpapan. Pengambilan sample menggunakan cluster random sampling dan pengumpulan data menggunakan test. Untuk menganalisa data menggunakan formula t-test. Hasil penelitian ini menunjukkan bahwa terdapat perbedaan signifikan pada kemampuan menulis mahasiswa yang diajarkan dengan metode deduktif dan mahasiswa yang diajar menggunakan metode induktif. Nilai rata-rata kelas experimental menggunakan metode induktif adalah 83 sedangkan rata-rata nilai kelas kontrol adalah 70. Hal ini menunjukkan bahwa rata-rata nilai kelas ekperimental lebih tinggi dari pada kelas kontrol. Oleh karena itu, dapat disimpulkan bahwa mahasiswa yang diajarkan dengan metode induktif memiliki kemampuan menulis lebih baik dari pada mahasiswa yang diajarkan dengan metode deduktif pada pembelajaran menulis.

Kata kunci : model pembelajaran , pemahaman membaca, motivasi belajar

Abstract

The objectives of this research are to know whether there is any significant difference in students' writing achievement in Balikpapan State Polytechnic between the students who taught using inductive method and those taught using deductive method and to know which group has higher achievement, the group taught using inductive method or the one taught using deductive method. The research methodology used experimental method. The population of this research is the third semester students of mechanical engineering in Balikpapan State Polytechnic. The sampling technique used cluster random sampling and in collecting the data used a test. In analyzing the data used t-test formula. The result of the research shows that there is a significant difference in the achievement of students' writing skill between the students taught using inductive method and those taught using deductive method. The mean of the experimental group taught using inductive method is 83 while the mean of the control group taught using deductive method is 70. It shows that the mean score of experimental group is higher than the control group. Therefore, it can be concluded that the students taught using inductive method have higher achievement than those taught using deductive.

Key word: comparative, deductive method, inductive method, teaching writing

1. Introduction

1.1 Background Study

Writing involves transferring message from our thoughts to the words using language. According to Byrne (1997: 4), writing is a difficult activity for most people, both in mother tongue and in foreign language. Writing is the most complex one compared with the other three skills. Not only putting letters, symbols, and numbers, but also it involves many aspects such as paragraph development, mechanics, and organization of content and it demands standard from grammar, syntax, and vocabulary. In writing, the relation between sentences operates at several levels. There needs to be thematic unity; a logical progression, and often made clear. Moreover, there need also to be grammatical linkage between sentences.

Writing is a basic language skill which is as important as speaking, listening, and reading. These skills are essential to academic success and a requirement for

many occupations and professions. In adult life, people's writing needs is both institutional and personal. Institutional writing is writing produced in a professional or institute role, such as that of businessperson, teacher, student, and conforms to institutional conversations. Personal writing includes personal letters and creative writing. For those purpose, it is very important to develop student's writing skill so that they will be ready to face the work world. One of the ways to develop the writing skills is by method. If we can find a right method in teaching writing skills, we will able to develop the student's writing skill.

Method is important in teaching learning process. Students will get difficulties in understanding the subject matter which is taught by teacher without appropriate overall plan for the orderly presentation of language material. In teaching writing skill, inductive method and deductive method are used by some lectures. Deductive method is the most common used in language teaching because it seems more reasonable for students and teachers. In this method, the students are given clear explanation and have them practice until the rule is internalized. The inductive sequence is probably preferred because it encourages language learners to start out from their own observations and to discover the principle or rule for themselves rather than being told in advance what the rule is. So, it can be concluded that in inductive, the way in teaching writing skill is to let the students work out the rules themselves.

1.2 Problems Statements

From the identification of the problem above, the problem is formulated as the following:

1. Is there any significant difference in writing achievement between the students taught using inductive method and those taught using deductive method?
2. Which group has higher achievement, the group taught using inductive method or one taught using deductive method?

1.3 Objectives of Research

The objective of the research is formulated as: to know whether there is any significant difference in writing achievement between the students taught using inductive method and deductive method and to know which group has higher achievement between the group taught using inductive method or one taught using deductive method.

2 Research Method

2.1 Research Methodology

Experimental research design is outline, plan, or strategy in conducting study. The design used in this research is Posttest-Only Control-Group Design. Based on Johnson and Christensen (2000: 241), Posttest-Only Control-Group Design is an experimental design in which administering a posttest to two randomly assigned groups of participants after one group has been administered the experimental treatment condition.

There are two variables used in this research, independent variable and dependent variable. Independent variable is variable that is manipulated by the experimenter and presumed to cause a change in the dependent variable (Johnson and Christensen, 2000: 221). Dependent variable is variable that researcher study to determine the influence one or more independent variables (Johnson and Christensen, 2000: 22). In other words, dependent variable is used to measure the impact of one or more variables. This research compares the writing achievement of students which is taught using inductive method and deductive method. So, the independent variable which is manipulated by experimenter is the methods, inductive and deductive method and the dependent variable here is writing

achievement, which is caused by the methods.

2.2 Population, Sample, and Sampling

The population of this research is the third semester students of mechanical engineering Balikpapan State Polytechnic. The sample of this research is 2 classes consisting 23 students in each class. One class is used as experimental group which taught using inductive method and the other class is used as control group which taught using deductive method. The researcher uses cluster random sampling.

2.3 Techniques of Collecting Data and Analyzing Data

In collecting data, the researcher uses an instrument called test. Whereas the test used in this research is used to measure the students' achievement after given a treatment. Because test is used to measure the writing achievement of students, the form of the test which is used in this research is an essay test. This kind of test requires the student to make an essay based on the instruction given. Burke (2000: 122) says that a good test or assessment procedure must be reliable and valid. Validity of measurement tool is considered to be the degree to which the tool measures what it claims to measure. Reliability is the consistency of measurements or of a measuring instrument, often used to describe a test. In order to make a good test, the researcher focuses on content validity, face validity, and inter-rater reliability.

Before the instruction is tested to the students, it needs to check the readability of the instruction. Readability is used to know whether the instruction is readable by the students or not. It is very important because the students will be instructed to make an essay with some certainty. So, the instruction should be able to read by the students and should be understood what the instruction mean.

In scoring writing, the researcher uses in scoring the writing achievement of students is analytic scales. Analytic scoring separates various factors and skills and so can be used by lecturers and students to diagnose writing strength and weaknesses. The analytic scoring consists of some criteria: content (the appropriateness with the title chosen), organization (paragraph unity, coherence and cohesion), grammar (tenses and pattern), vocabulary (the precision of using vocabulary), and mechanics (spelling and punctuation). After scoring writing, as a requirement for the t-test, firstly the data have to be tested using normality and homogeneity tests.

3 Result of the Research

3.1 Description of the Data

The data which are analyzed in this research is the result of the test. After giving treatments to the groups, the researcher gives a test to the students. In this research, the researcher used 2 kinds of texts, descriptive and procedure, and after treatment on each text, the researcher gave a test to the students. The score of the students are compared using t-test formula to prove whether there is any significant difference between the two groups and to find which group has higher score.

a. Experimental Group

From the data taken from the test, it can be seen that the highest score is 87, the lowest score is 60, the range is 27, the number of class is 7, and the interval we used is 4. The mean is 82, the mode is 85, the median is 85, and the standard deviation is 4.68.

b. Control Group

From the data taken from the test, it can be seen that the highest score is 83 the lowest score is 50, the range is 33, the number of class is 7, and the interval we used is 5. The mean of is 78.25, the mode is 78.45, the median is 78.50, and the standard deviation is 6.90.

Before the treatment given, it needs to check whether the two classes are similar or not. As the requirement of t-test, the data need to be tested for the normality and homogeneity. The normality testing used in this research is Lilliefors testing. From the data of experimental group, it is obtained that L_o is 0.1112. It is consulted with L table for $n = 36$ at the level of significance $\alpha = 0.05$, which is 0.1477. Because the value of L_o is lower than L table ($L_o < L_t$), it can be concluded that the sample of experimental group is in normal distribution. Meanwhile, from the data of control group, it is obtained that L_o is 0.1429. It is consulted with L table for $n = 36$ at the level of significance $\alpha = 0.05$, which is 0.1477. Because the value of L_o is lower than L table ($L_o < L_t$), it can be concluded that the sample of control group is in normal distribution.

The homogeneity testing used in this research is Bartlett formula. From the data, it is obtained that the chi square observation (L_o^2) is 5.0289, while the value of chi square table for $df = 1$ at level of significance $\alpha = 0.05$ is 5.991. Because L_o^2 is lower than L_t^2 , it can be concluded that the data are homogeneous.

3.2 Hypothesis Testing

The hypotheses that the writer has formulated are as follows: first, there is a significant difference in learning achievement of writing between students taught using inductive method and deductive method, second, the students taught using inductive method have higher achievement than those taught using deductive method.

3.3 Discussion

The result of the research shows that there is a significant difference in writing achievement between the students taught using inductive method and those taught using deductive method. Inductive method gives higher improvement than deductive method ($X_1 > X_2$). This result can be explained as follows: it has been described that inductive method consists of activities which must be done by the students themselves. Lecturer is as a facilitator because in this method the students are allowed to discover the data themselves. This condition will cause the students to be more active in the classroom. In deductive method, the teaching learning process is lecturer center, where the students do less activity than the teacher. It means that the students are considered as the object not the subject of the learning process.

From the description above, it can be concluded that inductive method is more effective to be applied in teaching writing because it can give better achievement in writing than deductive method.

4. Conclusion

Based on the result of the research, it can be drawn some conclusions as follow:

- 1 After analyzing the data, the researcher gets the result of the analysis. The result is that t observation (t_o) is 2.8007 while t table (t_t) for degree of freedom 70 and the level of significance $\alpha = 0.05$ is 1.950. It shows that t_o is higher than t_t ($t_o > t_t$). It means that there is a significant difference in teaching writing skill between students taught using inductive method and those who are taught using deductive method.
- 2 Another result of the data analysis in this research is the difference of the mean score of both group (the group which is taught using inductive method and the group which is taught using deductive method) which shows that the students taught using inductive method have higher mean score than the students taught using deductive method. It proves that inductive method is more effective to be applied in teaching writing skill than deductive method.

Based on the result of this research shows that inductive method can give better

achievement in writing than deductive method. It means that inductive method is appropriate to be applied in teaching writing for students in Balikpapan State Polytechnic. The selection of inductive method is reasonable because it is based on the condition of the students. They are more active in the classroom. They are expected to be able to find out the rule of writing text by themselves.

5. Suggestion

1. For the Students

The students should be active in the teaching learning process and do much more practices in the class. The students have to improve their competence of writing with various activities because writing is not only a complex skill compared to listening, speaking, and reading but also very important to academic success and as requirement for many occupations and professions.

2. For Other Researchers

The writer is aware that her research is not the end of the problem being studied. The result of the study merely confirms the hypothesis. It does not prove that something is absolutely true all the time. Moreover, together with the advancement of technology, there must be so many techniques and methods which are found which must be better than current techniques and methods. Thus, the research needs considerable improvement through further research studies.

6. References

- Bakshiri, N., & Mohammadi, M. (2014). Proactive/Reactive Focus on Form and Immediate/Delayed Writing Production. *Procedia - Social and Behavioral Sciences*, 98, 334–342. Retrieved from <http://doi.org/10.1016/j.sbspro.2014.03.424>
- Brown, Douglas H. 1994. *Teaching by Principles: an Interactive Approach to Language Pedagogy*. New Jersey: Prentice Hall.
- Budiono. 2004. *Statistika Untuk Penelitian*. Surakarta: Sebelas Maret University Press.
- Byrne, Donn. 1997. *Teaching Writing Skills*. London: Longman Group.
- Hyland, Ken. 2004. *Genre and Second Language Writing*. USA: University of Michigan Press.
- Jean, G., & Simard, D. (2013). Deductive versus inductive grammar instruction: Investigating possible relationships between gains, preferences and learning styles. *System*, 41(4), 1023–1042. <http://doi.org/10.1016/j.system.2013.10.008>
- Johnson, Burke & Larry Christensen. 2000 *Educational Research: Quantitative and Qualitative Approaches*. USA: A Pearson Education Company.
- Mason, Emanuel J. & William J Bramble. 1997. *Research in Education and the Behavioral sciences Concepts and Methods*. Madison: Times Mirror Higher Education Group, Inc.
- Syakur. 1999. *Language Testing and Evaluation*. Surakarta: Sebelas Maret University Press.
- Takimoto, M. (2008). The Effects of Deductive and Inductive Instruction on the Development of Language Learners' Pragmatic Competence. *The Modern Language Journal*, 92(3), 369–386. <http://doi.org/10.1111/j.1540-4781.2008.00752.x>
- Vogel, S., Herron, C., Cole, S. P. and York, H. (2011), Effectiveness of a Guided Inductive Versus a Deductive Approach on the Learning of Grammar in the Intermediate-Level College French Classroom. *Foreign Language Annals*, 44, 353–380. doi: 10.1111/j.194.

