
The Effectiveness of Inductive Teaching Technique in Improving Students' English Grammatical Ability

Ruly Morganna

The Faculty of Teacher Training and Education, Sebelas Maret University, Jl. Ir. Sutami No. 36 A Kentingan, Surakarta, Indonesia

Corresponding email: pasca@uns.ac.id

ABSTRACT

This study focused on examining the effectiveness of inductive teaching technique in improving students' English grammatical ability. A quasi-experiment on pretest-posttest-control-group design was employed to answer the research hypotheses. Its population encompassed whole second class students studying in a vocational school in Curup-Bengkulu with the samples, XI TKJ REG as the experimental group and XI AP I as the control group, selected based on homogenous sampling technique. The finding showed that students' grammatical ability before teaching with inductive and habitual technique was still homogenously low as shown by pre-test result. Subsequently, the ability from both groups rose as indicated by the post-test result. However, the experimental group gained a higher post-test mean score. Continuously, the effectiveness was proven by calculating "t" which resulted in $(2,9) > (2,410)$. The calculation inferred that inductive technique was effective in improving students' English grammatical ability. Practically, this study could contribute to give EFL teachers insights regarding the use and the significance of inductive technique in teaching English grammar. However, this study width was quite narrow by virtue of engaging only one school. Further studies were needed since the essence of inductive technique could improve not only students' grammatical ability but also their grammatical-related-reasoning skills.

Keywords: Inductive technique, grammatical ability, Teaching Grammar

1 INTRODUCTION

Grammar takes a fundamental place in the use of English since it ranges into the process of manipulating and combining words or bits of words in order to form longer units of meaning (Ur, 1996). As focused on communicative usage, grammar determines how words are arranged to form meaningful units (Coghill, 2003). Briefly to say, the essence of grammar contributes to the quality of message delivery in communication. Besides that communicatively related essence, if grounded to EFL teaching and learning, teaching grammar is crucial to develop students' insight into the structure of English language, to enable them assimilate the correct patterns of English, to develop their mental abilities of reasoning, and to help them develop a scientific attitude about English (Ediger, 2003). Indirectly, there eventually comes a particular need of qualified way for teaching grammar to EFL students so that they can be capable and master to deliver English appropriately.

Reflectively, the efforts of teaching English grammar to EFL students have been established in a variety of methods such as, commonly well known, deductive teaching,

inductive teaching, and incidental teaching. Deductive teaching initiates the process from rule to examples; on the other hand inductive teaching commences the teaching conduction from samples to rules, and incidental teaching focuses on the grammar for composing writing (Parel, 2008). From those commonly applied techniques to teach grammar, the second one, inductive teaching, seems unique since its concept and procedures not only contribute to grammatical knowledge acquisition but also promote learners' cognitive development. Nunan (2001) supports this idea since inductive teaching is regarded essential to lead non-native English speakers to capably use meaningful and contextual English. Therefore, teaching grammar more inductively and implicitly is preferred. Another agreement toward the usefulness of applying inductive technique in teaching grammar depicts that this technique promotes a natural language acquisition by virtue of practicing comprehending rules subconsciously, leads students more easily to the concept of inter-language development, and allows learners to get communicative "feel" for some aspects of language before being overwhelmed by grammatical explanation (Brown, 2001).

The power and quality of inductive teaching technique also contributes to give students opportunities in increasing their cognitive ability because the learning process through inductive way challenges students to use their intelligence by optimally utilizing both sides of brain (Setiawan, 1997). Conclusively inductive teaching not only supports learners' grammatical knowledge acquisition but also psychologically trains them to be capable of solving related grammatical problems with using their predictive analysis.

In inductive technique, the teacher begins with implicitly grammatical teaching in which there is a substantial period of oral practice while encouraging students to produce a number of grammatically similar sentences by using a range of questions, cues, and stimuli (Gewehr, 1998). This idea is in line with what is postulated by Tomlinson (2009), an inductive teaching technique is in which the teacher presents an ill-structured novel or complex grammatical problems for students to investigate and solve collaboratively with the teacher's guidance and coaching. Subsequently, its teaching procedures can be portrayed as the teacher initiates by providing some examples of grammatical forms, they are then observed, analyzed, and ultimately generalized by students (Prem, 2008).

The term inductive grammar teaching is also commonly called a sample-to-rule approach. Similarly depicted concept of this approach to inductive technique is given by Beydogan (2009), in which, students learn by using their own knowledge rather than listening to the teacher's explanation. Learning by exploration is enhanced with the practice dealing with the process in that students explore the given grammatical examples to their own conclusive rules with using their reasoning toward the learning material. This case increases students' interest and participation in the class. As the students explore relationship between samples, those that are learnt can longer be remembered.

Based on the above fundamental concepts and practices of applying inductive teaching technique, the following procedures illustrate the conclusive and practical ways to implement inductive technique in teaching English grammar in the classroom:

1. Presentation of examples and illustration
2. Analysis of examples

3. Generalization
4. The rules
5. Exercise

The uniqueness of inductive teaching which possesses the opposite framework to deductive teaching, teaching English grammar from rule to samples, makes a lot of researchers interested in examining the effectiveness of inductive teaching technique. Generally inductive technique is called as a modernist approach of teaching grammar, and otherwise deductive teaching refers to the traditional grammatical teaching. The choice concerning with which one is more effective is still controversial among researchers focusing on this realm. Some researchers confirm that traditional approach, deductive teaching, lacks of context therefore teaching grammar inductively are more effective and recommended (Petrovitz, 1997; Herron & Tomasello, 1992). Whereas, others argue that deductive teaching is more valuable and successful (Robinson, 1996; Seliger, 1975). A theorist, Krashen (1982) also advocates applying deductive teaching. However, the reasonable account why inductive teaching is both useful, helpful and beneficial is that through this kind of technique, the learners will acquire grammar with using their innate as the implication of utilizing their own analysis to generalize the rules from the previously given samples. Here, they could even comprehend the overall essence of grammar unconsciously form the process of generalization of samples into comprehensive rules. Such this value is also supported by Hammerly (1975); Shaffer (1989).

Such controversial phenomena around previous researchers related to the realm of inductive teaching technique for teaching grammar make the researcher interested in examining how effective inductive teaching technique is in improving students' grammatical ability. With this study, the researcher conducts a quasi-experimental study to examine inductive technique to EFL learners in Curup-Bengkulu, one of regions in Indonesia. This technique is applied to vocational school students having been learning on the second grade. The scope of this study is delimited on grammatical materials as provided by the school syllabus in that the materials range into present tense and WH questions in present tense. Hopefully this study will be useful to contribute as one of directions which recommend a choice of an alternatively effective technique to teach English grammar to EFL learners. This study also gives space to other further researchers who have the same interest to conduct wider studies overwhelming the implementation of inductive teaching technique.

2 METHOD

To examine the effectiveness of inductive teaching technique, this study employed an experimental research. An experiment is a scientific investigation in which the researcher manipulates one or more variables, controls any other relevant variables, and observes the effect of manipulations on the dependent variable (Gall, 2003). The design of this study employed a quasi-experimental design, and it was undertaken in one of vocational schools in Curup-Bengkulu on second grade students who had been coping

with English subject having dominantly grammatical materials as manifested in the syllabus. Concerning with this condition, this experiment was then automatically promoted since its practice was on English grammatical teaching under the use of inductive technique.

3 RESULT AND DISCUSSION

3.1 Students' Grammatical Ability Before the Implementation of Habitual and Inductive Teaching Techniques

The habitual teaching was applied in the control group (XI AP 1) which contained 36 students, and inductive technique was taught to the experimental group (XI TKJ REG) which contained 37 students. The data related to the condition before the implementation of both techniques are indicated by the following pre-test data analysis.

Table 1 Pretest Results of Both Groups

Group	Highest Score	Lowest Score	Total Score	Mean Score	Standard Deviation
Control	7,14	3,57	196,93	5,32	1,14
Experimen	7,00	3,43	201,23	5,59	1,1

As compared through utilizing the five elements above, the differences of each item between the two groups are very slight. The mean scores and standard deviations obtained by both groups indicate that students' grammatical ability from both groups before the implementation of habitual and inductive techniques is homogenously low.

3.2 Students' Grammatical Ability After the Implementation of Habitual and Inductive Teaching Technique

To comprehend the condition related to students' grammatical ability after both habitual and inductive teaching techniques were implemented, the measurement was done based on the result of post-test from both groups. The following table displays the related data analysis.

Table 2 Post-test Results of Both Groups

Group	Highest Score	Lowest Score	Total Score	Mean Score	Standard Deviation
Control	8,57	4,00	232,08	6,27	1,27
Experimental	8,71	4,00	255,01	7,08	1,08

The above table indicates that students' grammatical ability from both groups increases after both habitual and inductive techniques are taught if compared from the result of pre-test. However, the increase of grammatical ability got by students in the experimental group is higher. It is proven by the mean score of the experimental group that is higher than that of the control group, and the standard deviation of the experimental group which is lower than that of the control group. The lower the standard deviation is, the better quality the ability has.

3.3 The Effectiveness of Inductive Teaching Technique

The effectiveness was known based on the analysis of comparison between the data got by both control and experimental groups, and also on the proof of statistical calculation which utilized t calculation. To confirm the comparison of the data possessed by both groups, the researcher relied on three elements as the directives in comparing the data of both groups. The three criteria included mean score, standard deviation, and the score of students' standard of competence based on the curriculum developed for this vocational school. The clearer comparison is presented in the following table:

Table 3 The Comparative Results between Control and Experimental Group

Group	Mean Score		Standard Deviation		Students who get the score > 6,5		Students who get the score < 6,5	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Control	5,32	6,27	1,14	1,27	8	16	29	21
Experimental	5,59	7,08	1,1	1,08	8	27	28	9

As the data presented on the above table, the fact shows that the experimental group generates higher scores than those found in the control group. It is proven by the calculation of mean scores owned by both groups. In the control group, the mean score got from pre-test is 5,32 and that from post-test is 6,27. The range of increasing score only reaches 0,95. It can be said that the habitual teaching technique only improves students' grammatical ability as high as 0,95 based on the measurement through a valid and reliable instrument. Meanwhile, in the experimental group, the mean score acquired from pre-test is 5,59 and that from post-test is 7,08. The range of the increasing score achieves 1,49. It can be said that inductive teaching technique can improve students' grammatical ability as high as 1,49 based on the same procedure of measurement through the same valid and reliable instrument.

The above explanation indicates that the treatment of this study, inductive technique, had been obviously successful. In order to accurately prove its effectiveness, the statistical calculation was done. The effectiveness was statistically corroborated based on the analysis from hypothesis testing with employing t calculation. Basically, the objective of t-test was to prove whether the obtained "t" manifested in a significant difference between the post-test mean score of both groups.

Ultimately, from the *t* calculation undertaken in this study, the *t* score reached 2,9 and the score of *t* table was 2,410. The study proved that the *t* score was higher than the *t* table score, ($2,9 > 2,410$). This result concluded that the null hypothesis was rejected, and otherwise the alternative hypothesis was accepted, and it implied that inductive teaching technique was effective in improving students' grammatical ability.

4 CONCLUSION

Concerning with students' grammatical ability before the implementation of habitual and inductive teaching technique, the students in both control and experimental group have the condition of ability which is homogenously low. This fact is proven by pre-test result in both groups in that the control group. Subsequently, regarding students' grammatical ability after the implementation of habitual and inductive teaching techniques, it is good since the students from both groups respectively have increasing ability. Somehow, students' grammatical ability in the experimental group improves better than that in the control group. This condition is indicated by the post-test scores from both groups. Ultimately, inductive teaching technique is indeed effective in improving students' grammatical ability. The fact is represented by the result of "t" calculation as to examine hypotheses. Based on the calculation, "t" is found out as 2,9, and the score of "t" table is 2,410. As the comparison, it is proven that ($2,9 > 2,410$). This frame ascertains that null hypothesis is rejected, and otherwise alternative hypothesis is accepted. Conclusively, the result certainly proves that inductive teaching technique is effective in improving students' grammatical ability.

However this study is delimited on engaging only one school with narrow incorporated learning materials, present tense and WH questions in present tense, in the study conduction. Further related studies to take a wider realm in the aspects of both school involvement and the use of grammatical learning materials are really recommended to undertake for getting bigger essence and significance of inductive teaching technique implementation. In addition, the recommendation is also by virtue of the essence that inductive technique is effective to not only improve students' grammatical ability but also train their active related-reasoning as indicated by the implicit procedures of teaching grammar through utilizing inductive technique.

ACKNOWLEDGEMENT

I would like to take this chance to express my sincere gratitude to my honorable advisor, Mr. Prihantoro, who kindly gave me useful guidance while dealing with the accomplishment of this study, and to my lovely colleague, Nastiti Handayani, who kindly kept supporting me all days.

REFERENCES

- Beydogan, H. O., & Bayindir, G. (2010). *Effect of concept map supported teaching approaches from rules to sample and from sample to rules to grammar teaching. Procedia Social and Behavioral Sciences*, 2, 3954-3964.
- Brown, H. D. (2001). *Teaching by principles: An interactive approach to language pedagogy* (2nd ed.) (p. 365). San Francisco State University, Longman.
- Carter, R., & Nunan, D. (2001). *The Cambridge guide to teaching English to speakers of other languages* (p. 162). New York, Cambridge University Press.
- Coghill, J., & Magedanz S. (2003). *English grammar* (p. Xvi). New York, Wiley Publishing.
- Ediger, M. (2003). *Teaching English successfully* (P. 35). New Delhi, Discovery Publishing House.
- Gall, M. D., Gall, J.P., & Borg, W. R. (2003). *Educational research: An introduction* (7th ed.) (p.265). New York, Pearson Education.
- Gewehr, W. (1998). *Aspects of modern language teaching in Europe* (129). London, Routledge 11 New Fetter Lane.
- Hammerly, H. (1975). *The deduction/induction controversy. The Modern Language Journal*, 59(1/2), 15-18.
- Herron, C., & Tomasello, M. (1992). *Acquiring grammatical structures by guided induction. French Review*, 708-718.
- Krashen, S. (1982). *Principles and practice in second language acquisition* (pp. 65-78). Oxford, Pergamon.
- Parel, M. F., & Jain P. M. (2008). *English language teaching: Methods, tools & techniques* (p. 141). Jaipur, Sunrise Publishers & Distributors.
- Petrovitz, W. (1997). *The role of content in the presentation of grammar. ELT Journal*, 51(3), 201-207.
- Prem, S. (2008). *Teaching of English* (p. 75). New Delhi, S.B. Nangia A. PH Publishing Corporation.
- Robinson, P. (1996). *Learning simple and complex second language rules under implicit, incidental, rule-search, and instructed conditions. Studies in Second language Acquisition*, 18(01), 27-67.
- Seliger, H. W. (1975). *Maturational constraints in the acquisition of second language accent. Language sciences*, 36, 20-22.
- Setiawan, C. (1997). *Perspektif pendidikan anak berbakat* (p. 123). Jakarta, PT Grasindo
- Shaffer, C. (1989). *A comparison of inductive and deductive approaches to teaching foreign languages. The Modern Language Journal*, 73(4), 395-403.
- Tomlinson, C. A., Kaplan, S. N., Renzulli, J. S., Purcell, J., Leppien, J., & Burns, D. (2009). *The parallel curriculum: A design to develop learners' potential and challenge* (p. 50). California, Corwin Press, INC. A Sage Publications Company Thousand Oaks.
- Ur, P. (1996). *A course in language teaching from practice to theory* (p. 4). Cambridge, University Press.