

A STUDY ON EFFECTIVENESS OF INDUCTIVE METHOD IN TEACHING GRAMMAR TO THE FIRST YEAR NON-ENGLISH MAJOR STUDENTS AT THAI NGUYEN UNIVERSITY OF SCIENCES

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ARTICLE INFO		ABSTRACT
Received:	25/5/2023	Grammar is one of the three important aspects of knowledge in English which plays an important role in learners' four skills, particularly writing and speaking skills. There are many different ways of teaching grammar, but this study only investigates the effectiveness of inductive method in teaching grammar. The object of the research is 60 first-year non- English language major students at Thai Nguyen University of Sciences. The students were randomly divided into 2 groups (experimental group and control group), each group consisted of 30 students. Before conducting the study, students of both groups were given a pre-test to ensure that the input ability of students in the two groups was not different. After that, students of experimental group were taught grammar with inductive method. In contrast, deductive method was used for the control group. At the end of a semester, students of both groups took a post- test. The results of the tests were compared to evaluate the effectiveness of inductive method. The study results showed that both groups had progress, but the results of the experimental group were higher than that of the control group.
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NGHIÊN CỨU TÍNH HIỆU QUẢ CỦA PHƯƠNG PHÁP QUY NẠP TRONG DẠY NGỮ PHÁP CHO SINH VIÊN KHÔNG CHUYÊN NGỮ NĂM THỨ NHẤT TẠI TRƯỜNG ĐẠI HỌC KHOA HỌC – ĐẠI HỌC THÁI NGUYÊN

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THÔNG TIN BÀI BÁO		TÓM TẮT
Ngày nhận bài:	25/5/2023	Ngữ pháp là một trong ba khía cạnh kiến thức quan trọng trong tiếng Anh, đóng vai trò lớn đối với bốn kỹ năng, đặc biệt là kỹ năng viết và kỹ năng nói của người học. Có rất nhiều cách giảng dạy ngữ pháp khác nhau, tuy nhiên, nghiên cứu này chỉ tập trung làm rõ tính hiệu quả của phương pháp quy nạp. Đối tượng nghiên cứu là 60 sinh viên không chuyên ngữ năm thứ nhất của trường Đại học Khoa học – Đại học Thái Nguyên. Các sinh viên được chia ngẫu nhiên thành hai nhóm (nhóm thực nghiệm và nhóm đối chứng), mỗi nhóm gồm 30 sinh viên. Trước khi tiến hành nghiên cứu, sinh viên của cả hai nhóm được làm bài kiểm tra để đảm bảo năng lực đầu vào của sinh viên hai nhóm là không có sự khác biệt. Sau đó, sinh viên của nhóm thực nghiệm sẽ được học ngữ pháp theo phương pháp quy nạp. Ngược lại, sinh viên ở nhóm đối chứng sẽ được học theo phương pháp diễn dịch. Kết thúc kỳ học, sinh viên ở cả hai nhóm làm bài kiểm tra đầu ra (bài kiểm tra tương tự như kiểm tra đầu vào). Kết quả của các bài kiểm tra sẽ được so sánh để đánh giá tính hiệu quả của phương pháp quy nạp. Kết quả nghiên cứu cho thấy cả hai nhóm đều có sự tiến bộ, tuy nhiên, kết quả của nhóm thực nghiệm cao hơn so với nhóm đối chứng.
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1. Introduction

Language plays an important role which is considered a tool for people to provide and exchange information with each other. Among three aspects of knowledge, grammar is a crucial component because sentences cannot be formed correctly and comprehensively without grammatical rules. In fact, there were a lot of researchers who investigated and discussed on the significance of grammar in language acquisition. According to Cook [1], grammar is the centre of language. Huang [2] claimed that teaching and instructing grammar helped learners to improve their linguistic competence. Ellis [3] also admitted that grammar instruction could assist students improve their language proficiency and accuracy, make it easier for them to internalize the syntactic structure a foreign language, and help them become more fluent. Therefore, the main purpose of teaching grammar is to ensure that learners can understand and construct sentences correctly and apply those grammatical rules to different situations.

According to Nunan [4], grammar is a set of rules to order words in the sentences and sentences are only formed correctly if they follow the grammatical rules. In spite of its importance, grammar is always considered an isolated section which is taught separately and learners only try to remember rules and tips leading to the fact that learners do not know when and how to use grammar for different situations. That is also one of reasons why most English learners in Vietnam do very well on multiple-choice grammar tests, but when taking oral or writing tests, they often make grammatical mistakes or sometimes they find it difficult to form sentences and express their ideas. Therefore, learners tend to be better at recognizing rather than using.

This problem can only solved by considering other teaching methods. Deductive and inductive methods are two effective ways in instructing grammar. Deductive teaching method is often called top-down approach which is used widely in EFL classrooms. The rules are given first and illustrative examples are presented later on. Finally, students apply the rules to produce their own examples. This process shows that grammar is taught from the general to specific which was pointed out by Fortune [5] and Erlam [6]. By contrast, in inductive method, Richards et al. [7] claimed that grammatical rules are not instructed directly, but they are discovered through learners' experience of using the language. Teachers will give examples at the beginning of the lesson and ask students to analyze examples to find out the grammar rules on their own. Then, teachers will conclude and give correct rules as well as grammar structures. Lastly, learners will write their own examples. It can be seen that the inductive teaching is a student-centered learning method and enables learners to be practiced and involved in the language they are studying [8], [9]. Through this method, learners can remember and use grammar more properly when they examine examples and discover rules themselves.

There were a lot of studies investigating the effectiveness of these two methods. Al- Emami [10] investigated the impact of the inductive and deductive methods on teaching relative clause. Dang and Nguyen [11] and Alzu'bi, M. A. [12] also conducted researches to see which approach is better. The findings revealed that the inductive method had positive influences on teaching grammar.

In terms of students at Thai Nguyen University of Sciences, teaching grammar still plays an important role and a lot of learners get troubles in doing grammar tests and using grammar in speaking and writing. So how can students learn, remember, understand and apply aspects of grammar more easily? Deduction and induction are two popular methods in teaching grammar in Vietnam; however, deductive method seems to be used more in EFL classroom. Therefore, this study investigates the effectiveness of inductive method in teaching grammar to see whether it has positive impacts on students' ability and eventually choose the suitable method for students at Thai Nguyen University of Sciences.

The study aimed at answering the question:

- What is the effect of inductive method on teaching English tenses in comparison with deductive method?

2. Methods

2.1. Participants

Participants of the study were 60 students of two classes at Thai Nguyen University of Sciences. Almost all participants come from mountainous area; they have been learning English for seven to nine years. They already learnt about basic grammar before enrolling at university. The participants were divided into two groups as a control group and an experimental group. Each group included 30 students.

2.2. Data collection instruments

Pre-tests and post-tests were designed to evaluate students' ability about using different tenses in English. There are two kinds of test including the recognition test and production test. The score was marked on a 10-point scale.

The recognition test was used to examine how well students realised the rules of tenses, correct forms of verbs, correct orders in statement and in questions. This test included 20 four-option multiple-choice questions and each question has one correct answer. Students had to do the test in 10 minutes. The score of this test was based on the number of correct answers. The data from this test would help the researcher evaluate the participants' recognition ability about different tenses in English.

In terms of the production test, it consisted of two tests which were writing test and speaking test. The production tests aimed at evaluating participants' ability to use grammar in speaking and writing. About writing test, participants were required to rearrange the order of the given words to make a correct sentence (10 questions, 5 points) and translate Vietnamese statements into English using suitable tenses (10 questions, 5 points). About speaking test, students were asked to answer questions about familiar topics which they were introduced during the treatment period. Students' performances were evaluated based on how well they used the tenses in English (20 questions, 10 points).

2.3. Procedure of data collection

A quasi-experimental design was used for the present study. The research followed these following steps:



First of all, students of both groups were given pre-tests for checking their ability. The pre-test was used to see whether all students of both groups were homogeneous in their knowledge of grammar before starting research.

After taking pre-tests, learners in experimental group were instructed grammar through inductive method. Whereas, students in control group were taught grammar by deductive method.

Finally, students of control and experimental groups were given two post-tests in order to compare the range of improvement between them. The post-tests were the same format, level and language to the pre-tests to be able to evaluate accurately the differences between both groups in pre-tests and post-tests.

This study concentrated on tenses in English so other aspects of grammar, pronunciation were skipped.

2.4. Teaching procedure

The students of both groups were introduced tenses in English during a semester. While experimental group was instructed inductively, deductive was used for the control group. Each group was taught through different steps.

Inductive approach: Examples → Practice → Rules

Deductive approach: Rules → Examples → Practice

After being introduced grammar, students were asked to work in pair to do exercises in terms of recognition exercises and production exercises. Students were carefully instructed by the teacher who would give recommendations if necessary. This step helped students improve their grammar comprehension and production.

3. Results and discussion

3.1. Comparison of two groups on pre-test

3.1.1. The data from recognition test

Table 1 compares the scores of both groups from recognition pre-test. The results showed that the difference between control group and experimental group was negligible. The average score of experimental group was 6.4 which is a bit less than that of control group (6.4333). Table 2 indicates that there was not much difference about the score range between two groups. It means that the recognition ability of students in both groups was similar.

Table 1. Comparison of two groups on recognition pre-test

Groups	Average number of correct answers	Percentage	Score
Experiental group	12.8	64	6.4
Control group	12.86	64.4	6.44

Table 2. Comparison of two groups on score range (pre-test)

Score range	Experiental group		Control group	
	Number	Percentage	Number	Percentage
4.0 - < 5.5	3	10	3	10
5.5 - < 7.0	16	53.34	15	50
7.0 - < 8.5	9	30	11	36.66
8.5 - < 10	2	6.66	1	3.34 %

3.1.2. The data from production test

In terms of production writing test, 2 tests were designed which were writing test and speaking test to see if there were any differences between these skills. Table 3 demonstrates that students of both group did task 1 better than task 2 and both groups witnessed the similarities about the scores.

Table 3. Comparison of two groups on production writing test (pre-test)

Groups	Score		Total score
	Task 1	Task 2	
Experiental group	2.65	2	4.65
Control group	2.6	2.067	4.667

The speaking pre-test between two groups was computed to show that students' production ability in oral tests was similar as shown in table 4. The average scores of experimental group and control group were 4.25 and 4.23 respectively. In comparison with writing test, the results from speaking test was a bit lower. The scores of writing and speaking test were both under 5 points.

Table 4. Comparison of two groups on production speaking test (pre-test)

Groups	Score
Experiental group	4.25
Control group	4.23

After analysing the results from recognition test and production test, it revealed that students at Thai Nguyen University of Sciences could realise tenses in English better than produce them in speaking and writing.

3.2. Comparison of two groups on pre-test and post-test

3.2.1. The data from recognition test

Table 5 showed the comparison of the results from recognition pre-test and post-test of both groups. In comparison with the pre-test, post test was experienced a higher result; however, students of experimental group achieved better scores. The score of experimental and control groups increased from 6.4 to 7.95 and from 6.43 to 7.4 respectively.

Table 5. Comparison of two groups on recognition pre-test and post-test

Groups	Average number of correct answers		Score	
	Pre-test	Post-test	Pre-test	Post-test
Experiental group	12.8	15.9	6.4	7.95
Control group	12.86	14.8	6.44	7.4

Table 6. Comparison of two groups on score range in pre-test and post-test

Score range	Experiental group		Control group	
	Pre-test	Post-test	Pre-test	Post-test
4.0 - < 5.5	3	0	3	0
5.5 - < 7.0	16	3	15	9
7.0 - < 8.5	9	16	11	16
8.5 - < 10	2	11	1	5

It can also be seen from table 6 that there was dramatic changes in student's score range. Post-test was seen more students getting score from 7.0 to 10 and there was no under 5.5-score. Both groups had the same number of students who had achieved 7.0 to 8.5, at 16. It is noteworthy that the experimental group was seen an increase in the number of students getting scores from 8.5-10. Experimental group had doubled the control group, with 11 and 5 respectively.

To sum up, applying both deductive and inductive methods had positive effects on teaching grammar. However, inductive teaching method helped students improve their scores in grammar tests better than deductive one.

3.2.2. The data from production test

As can be seen from table 7, production writing post-test saw a considerable increase in students' scores of both groups. The score of control group was 5.966667 which was much lower than that of experimental group, at 6.7 points. It can be seen clearly from the table that students were better at rearranging words than translating.

Table 7. Comparison of two groups on writing pre-test and post-test

Groups	Pre-test score		Total score	Post-test score		Total score
	Task 1	Task 2		Task 1	Task 2	
Experiental group	2.65	2	4.65	3.73	2.9667	6.7
Control group	2.6	2.067	4.667	3.22	2.75	5.966667

Although both groups witnessed a more positive result in speaking post-test, the experimental group had a higher result in comparison with control group. Therefore, it could be concluded that both deductive and inductive teaching methods were helpful in improving the learners' production ability. The score of experimental group was 6.18 followed by control group, at 5.73 (table 8).

Table 8. Comparison of two groups on speaking pre-test and post-test

Groups	Pre-test score	Post-test score
Experiental group	4.25	6.18
Control group	4.23	5.73

As results obtained, it could be seen that although both writing test and speaking test were seen a better result in post-test, students seemed to do better at writing test than speaking one.

That means the effect of teaching grammar on writing skills was faster and more obvious. It would take time for students to use grammatical rules properly for speaking.

3.3. Discussion

After comparing pre-test and post-test, the research question was able to be answered obviously. There was a difference between the control group and the experimental group after teaching grammar inductively and deductively. Both methods brought positive results in terms of participants' recognition and production ability. However, the findings indicated that students could realize grammar better than using grammar in writing and speaking. The average score in production and recognition test was improved in post-test. Although the score of both groups increased considerably, the experimental group saw a more significant rise. It can be concluded that inductive teaching method had positive effects on teaching grammar.

The findings of this research was consistent with study by Dang and Nguyen [11] who concluded that indirect explicit grammar instructions (inductive teaching method) brought great contribution to improving eleventh-graders' rule comprehension of different tenses in English and using tenses in speaking. Although there were differences about participants' age, the results approved that inductive instructions on tenses did wonder for learners' recognition and production.

Alzu'bi [12] conducted a research to compare the effectiveness of teaching tenses inductively and deductively. Pre-test and post-test were designed to examine and evaluate the impacts of two methods on teaching grammar in English. The findings of the study showed that both inductive and deductive instruction helped students improve their academic achievement. However, participants of experimental group who were taught inductively had better results in comparison with students of control group. While the present study focused on the first year English major students in a university in Vietnam, the participants of previous study were conducted in Jordan. Learning and teaching environment among participants was totally different but the studies' results approved that inductive method was advantageous to students' recognition ability.

The findings from earlier investigations were similar to those of the current study, regardless of differences or similarities of participants, age, learning environment. They demonstrated how introducing grammar inductively improved learners' academic achievement. Hopefully, this approach will be applied widely, especially at Thai Nguyen University of Sciences.

4. Conclusion

The current study explored the effectiveness of inductive teaching method on teaching grammar to non-English major students at Thai Nguyen University of Sciences. After the results were compared and analyzed, there were some conclusions as below:

Both groups started at the same level at production and recognition ability. After treatment, an improvement was seen in both groups; however, the experimental group had a bit higher results in comparison with control group. It can be concluded that both deductive and inductive approaches contributed to learners' grammar acquisition, but it seemed to be more effective when grammar was instructed with inductive method.

Although results from both recognition and production post- tests were more positive than that of pre-tests, students realised grammatical rules and structures better than producing them in speaking and writing. According to Rutherford and Sharwood Smith (as cited in [13]), they emphasized that learners' language acquisition would be supported when they understood the rules of the target language. Therefore, the results of this study contributed to clarifying the importance of grammar in foreign language learning, especially in improving speaking and writing skills.

This study was conducted in one university with the participation of 60 students, so it might not be generalizable in all contexts. It is advised to carry out further studies on this topic in various EFL classrooms with more participants and longer treatment time. However, this experimental study represents the researcher' efforts to investigate a very real part of language to

improve students' grammar comprehension, writing and speaking skills. Although research still has certain limitations; however, it also provides a valuable opportunity for researchers to have thorough insights into the importance of grammar in teaching and learning a foreign language. It is hoped that students would benefit from this study and would devote more time and effort to improve their knowledge of grammar which brings great contribution to language acquisition.

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