The Effect of using Inductive and Deductive Approaches on Students’ Achievement in Teaching English Grammar

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Abstract:
This study aims to investigate the effect of using inductive and deductive approaches on SLIATE students’ achievement in teaching English grammar. This study also intends to describe the students’ achievement towards inductive or deductive teaching approaches. This study was a quasi experimental study which compares the effectiveness of inductive and deductive approaches in teaching grammar. The sample of the study is 50 students in Sri Lanka Institute of Advanced Technological Education (SLIATE). The students consist of two group and each group comprises 25 students. The findings indicate that deductive teaching approach is more effective than inductive approach when used to teach grammar. The result of the questions indicates that students like deductive approach and they are satisfied taught using deductive approach. And the study revealed that there were significant statistical differences at (α ≤ 0.05) among the grammar performance means of both groups due to deductive method.

Keywords: inductive approach, deductive approach, present perfect tense, academic achievement.

01. INTRODUCTION

Over the years the role of grammar has been one of the most controversial issues in the field of second and foreign language teaching. Nowadays, grammar has gained a prominent position in the second and foreign language classroom. The controversy over methods of teaching grammar has developed in the recent past, but the question remains as to the relative effectiveness of different method. Grammar is considered to be the most important part in learning foreign language. Without a good knowledge of grammar, learners’ language development will be severely constrained” (Limiris & Prijimabodo, 2013). Teaching grammar plays a central role in every English Foreign Language (EFL) teacher's classroom and has been the focus of language teachers and learners for many years. Some people perceive it as essential to teach any foreign language whereas others view it as an impediment to Second Language Acquisition (SLA). Through his empirical study, (Ellis, 2006) concluded that grammar teaching can help students to enhance both their language proficiencies and accuracy, facilitate the internalization of the syntactic system of the second and foreign language, and supply the development of fluency. Although grammar is given importance in the classroom teaching in Sri Lankan universities and schools, its rules are taught in isolation and sufficient practice is not given in the use of different aspects of grammar in reading, writing, speaking and listening. Also, functional grammar is not taught and practiced in the class room. More importance is given to the teaching of English textbook and grammar is taught without adopting suitable method, e.g. inductive method or deductive one. This problem of teaching English grammar can be solved by changing our teaching methods and by using different techniques of teaching. For instance, adopting the inductive method (Socratic, rule-discovery, bottom-up) of teaching English grammar or deductive method (rule-driven, top-down). Inductive method is based on group work activities and giving generalizations and examples firstly.

(Richards et al, 1985) claimed that learners are not taught rules directly, but are left to discover - or induce - rules from their experience of using the language. On the other hand, in deductive method, the rules of grammar are dictated to the students and then particular examples are given. Also, sufficient practice is not provided in the use of different aspects of grammar. The inductive approach, instead of basing on a teacher-fronted transmission-style classroom, is student-centered and allows learners to become deeply involved in the language they are studying and offers potential for reflection. In the process of experiential learning (learning-and-doing) the students feel more important less passive, and do not get bored so easily during the lesson. Therefore, the inductive technique can render great service to teachers who have problems in keeping their students disciplined, concentrated and occupied, as it partly obviates these problems. Knowing that they can work out the rules from examples by themselves greatly increases learners’ motivation, makes them attentive, more actively involved in and confident and enthusiastic about the learning process rather than simply passive recipients, and at the same time contributes to its effectiveness. This study is undertaken to see whether the inductive or deductive models in teaching English grammar has a positive effect on the academic achievement of the SLIATE students. So, the need is to find the effectiveness of teaching English grammar by using deductive model and inductive model. English grammar teaching is a big challenge to both, the teacher and the students. To teach English grammar, the teacher follows different methods in order to meet the students’ needs, levels and abilities. And these different methods affect negatively or positively the students’ achievement level, especially in grammar and in learning English generally. Also, that will affect on the students’ attitudes toward learning English as a foreign language. As teachers-participants in the teaching process, the researchers need to know the effectiveness of using the inductive and deductive methods on students’ achievement in grammar and their attitudes. This problem of teaching of English grammar can be solved by changing our
teaching methods and using different techniques of teaching for instance adopting the inductive method of teaching English grammar or deductive method.

02. LITERATURE REVIEW

“Grammar is generally thought to be a set of rules specifying the correct ordering of words in the sentences” (Nunan, 2003). According to the previous statement, the importance of grammar discussed many years ago. The sentences of any language are accepted if they follow the rules of that language (Nunan, 2003). Grammar, according to (Cook, 2001), is the central area of the language around which other areas such as pronunciation and vocabulary are centered. Grammar relates sound and meanings which is called sometime the computational system. Grammar is a unique aspect of language that has features which don’t occur in any mental process and aren’t found in animal languages. Also, grammar is learnt in many different ways.

Teaching grammar is rooted in the formal teaching of Latin and Greek which are used in many schools in Europe for many centuries. In that time, the Grammar-Translation Approach was developed in order to analyze the languages and their complicated rules. Latin and Greek were the keys to the thought and literature of a great and ancient civilization, so the reading and translation of texts were important as writing exercises in imitation of these texts. This approach aims at creating an understanding of the grammar of the language, expressed in traditional terms, providing the students with a wide literary vocabulary, and training the students to extract the meaning from foreign texts by translating it into the native language (Rivers, 1968).

2.2 Inductive method

Inductive approach comes from inductive reasoning, stating that a reasoning progression proceeds from particulars which are observations, measurements and data, to generalities which are rules, laws, concepts and theories (Widodo, 2006). According to (Nunan, 2003), Inductive is presenting the learners with samples of language and, through a process of guided discovery, get the learners to find out the principle or rule for themselves.

This method is most close with the Audio-lingual Approach in teaching languages (Gollin, 1998). This approach, according to (Brinton & Celce-Murcia and Snow, 2014) was driven from the reform movement. The audio-lingual approach appeared in the United States during World War II. Some features of this approach are:

- Lessons begin with dialogues.
- Grammatical structures are sequenced and rules are taught inductively.
- Skills are sequenced.
- A great effort is made to prevent learner errors.
- Vocabulary is severely controlled and limited in the initial stages (Brinton, Celce-Murcia & Snow, 2014).

Inductive, according to (Celce-Murcia and McIntosh 1979), presents examples by which the learner induces the relevant second language rule. In the audio-lingual approach, inductive is dominant although the learner is never required to state the rule. (Hulstijn 2005) says that students see the structure embedded in instances where it is naturally used, which later leads to an explicit definition of the grammar rule.

2.3 Deductive method

Widodo, (2006) says that the deductive method is derived from the notion that deductive reasoning from general to specific. That means rules, principles, concepts or theories are presented first, and then their application is treated. In this method, learners study grammar rules before applying the rules in doing exercises. That means the learners work from the general to the particular (Fortune, 1992). Erlam (2003) defines the deductive method as a process that moves from general to specific. The learners are exposed to the general use, and then they apply the rule to particular instances of language use. And this method is most close with the Grammar-Translation approach (Gollin, 1998). This approach, according to (Brinton, Celce-Murcia and Snow, 2014) was used as a way to teach Latin and other languages. This Approach has some elements, which are as follows:

- The focus is on grammatical parsing.
- Using the native language of the students.
- Little use of the target language for communication.
- Atypical exercise is to translate sentences from the target language into the mother tongue.

The Deductive method is related to conscious learning. This method tries to place a great emphasis on error correction and presentation of explicit rules. The deductive method is often used with adult learners. The teacher in this method teaches the rule explicitly to learners, and they are ready to cope with exercises given (Krashen, 2002).

2.4 Review of related studies

On the other hand, other studies have been done on the use of the inductive way at school level. For example, (Tammenga-Helmantel, 2014). Conducted a quasi-experimental study to compare the effectiveness of deductive, inductive, implicit and incidental grammar instruction. The sample of the study consists of 981 Dutch students in lower secondary education learning German, English or Spanish as a second language. The design of the study consisted of a pre-test, a series of lessons about the degrees of comparison and a post-test. Both meta-linguistic knowledge and production of the grammatical structure were tested. By using analysis of variance, differences in students’ test scores between instruction forms were examined.

Finally, Al- Emami (2005) carried out a study aimed at comparing the effect of the inductive and deductive ways of teaching on learning relative clauses in English Language. The sample of the study consisted of 160 scientific and literary male and female students who were divided into two groups, the inductive and deductive. This sample was given a pre-test to find out if there was a statistically significant difference (α≤0, 05) between the means of students’ achievement marks. After conducting the experiment, a post-test was given to the students in both groups; results indicated a statistically significant difference (α≤0, 05) between students’ achievement on relative clauses according to way of instruction, sex and stream of study. Concerning the first question of this study which addresses if there are any statistically significant differences (α≤0, 05) in the students’ achievement according to ways of instruction, results show a significant difference in favor of the inductive way of teaching.

After reviewing the related literature, the researcher concluded that the use of inductive method in teaching grammar has proved to be effective in most of the cases, whereas the deductive method was not the same. There are no studies that compared between the effect of both methods on students'
grammar achievement at school level together so the researcher investigate the effect of the both methods on grammar at university level on one hand, and its effect on students grammar achievement at school level, on the other hand. Moreover, few local or foreign studies deal with the relationship between deductive and inductive ways of teaching and students’ achievement in general grammar. Therefore, the present study hopefully tried to shed light on the best ways of teaching which can be used by EFL teachers in teaching general grammatical structures to students at both levels.

As has been seen above, some previous studies show that students learned better by the deductive method, while other studies show the opposite. However, some other studies find out that the students performed better in the both methods which are inductive and deductive such as Berendse’s study which investigated the effect of inductive and deductive instruction when learning grammatical structures in an ESL classroom with Dutch secondary school pupils. Also, there are some previous studies investigate the relationship between the students’ attitudes towards learning English and their academic achievement such as Alsamadani’s study which found that students have positive attitudes towards learning English as a foreign language (EFL). According to this study, it shows the effect of using the inductive and deductive methods on the students’ achievement level in grammar and their attitudes towards EFL. This study doesn’t separate between the two teaching methods and compared between them, but it used them as one new teaching method. This study also is the first study and research which investigates the effect of using inductive and deductive methods on the students’ achievement in Palestine, and this is what characterizes this study and distinguishes it from the previous empirical studies. In addition to that, this study measures the students’ attitudes towards EFL. Also, this study uses the two previous methods as one method and compares it with the traditional way of teaching grammar to know their effect on students’ achievement in grammar and also measures the attitudes of students towards EFL.

03. METHODOLOGY

Research methodology is a science of studying how research is to be carried out. Essentially, the procedure by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. Moreover, it is the specific procedures or techniques used to identify select, process analysis information applied to understanding the problem about the topic. This chapter clearly describes intervention process, to the students related to research topic. The population include more than 500 students studying in SLIATE. A number of samples 50 from class is taken. The written test was conducted in 2 steps which are pre-test and post-test. All of the 50 students in the study have studied English from onwards. They have learnt English in the formal class room, and they are taught 5 periods of 40 minutes duration a week, i.e. three hours and twenty minutes. Each year is divided into two semester and at the end of each term there will be an examination. I divided the 50 students as two groups equally which are inductive and deductive groups for conducting the test and carry out the lesson easily.

All of the participants took part in the research selection method. Two types of tests were administered for the students’ achievement. The written tests were conducted in two steps which are pre-test and post-test. In order to address the problem, I designed that include series of activities. And I have chosen to investigate the present perfect tenses. This research was implemented in the form of an action research. Action research is usually conducted in the natural class room setting. And it helps to observe the behavior and the response of the students.

To achieve the aims of the study, the researcher designs the following Instruments:

- A grammar test for SLIATE students (as pre-post-test & post-test)
- Inductive instructional program based on the syllabus of each level and deductive instructional program based on the syllabus of each level.

3.3.1 The tests

For the purpose of the study, two grammar achievement tests were used. Four major questions were prepared to SLIATE students. The general purpose of these instruments was to compare the achievements of the two groups on the pre and post-tests.

The test of both levels measures the students’ achievement to:

1. Recognize the rules of tenses with fill in the blanks.
2. Recognize subject-verb agreement with chosen the correct verb and rearrange sentences.
3. Make yes/no questions.
4. Make WH questions.
5. Make or form negative form.

The researcher designed two tables of specifications for both tests that show the distribution of questions among content and objectives.

3.3.2 The instructional programs

Inductive and deductive programs were used to develop the grammar of the experimental groups. The first program focuses mainly on teaching inductive activities and its main principle can be represented schematically in the following way:

**Inductive approach:**

Specific examples → Practice → General rule

But the second program based on deductive method can be represented schematically in the following way:

**Deductive approach:**

General rule → Specific examples → Practice

3.4 Variables of the study

The variables of the study are one independent variable and one dependent variable. The independent variable is the method of teaching, and the dependent one is the students’ achievement.

This study was conducted during the first semester of the academic year 2019 SLIATE students. The following procedures were followed for the purpose of the study:

1. Getting the approval of the selected institute to conduct the study.
2. Drawing a sample of the study.
3. Preparing the inductive and deductive programs which were taught to the experimental group and control group for ensuring its validity.
4. Constructing the pre- / post-test and ensuring its validity and reliability.
5. Administrating pre-test to the two groups of the study to measure their grammar before applying the programs.
6. Training the volunteer instructors and teachers in implementing the programs by the researcher.
7. Post-testing the groups to measure their grammar.
8. Analyzing the obtained data.

04. DATA ANALYSIS

This study was designed to determine the effect of using the inductive deductive methods on SLIATE students’ achievement in grammar. In this section the researcher presents the result of the study. Apart from that, I collect some quantitative data through the pre-test and post-test. Having all the details and data collected from the pre-test and post-test, I was able to observe progress on students’ achievement and ability level gradually. And correction of this paper systematically done. The researcher used to the descriptive statistic which are means and standard deviation, in addition to the inferential statistics, which had analysis of variances (ANCOVA), using SPSS, and person correlation after correcting data from pre-test and post-test.

4.2 Pre-test

The following table shows to the mark obtained by the students in the pre-test for 100 marks. Firstly, to make sure that both are equivalent, the pretest between the two groups of SLIATE students was computed as shown in Table1.

<table>
<thead>
<tr>
<th>METHODS</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>T</th>
<th>Df</th>
<th>Sig.(2_tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deductive</td>
<td>66.76</td>
<td>25</td>
<td>13.408</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table1 indicates that T value of grammar was -2.346. It is statistically significant at (α ≤ 0.09). Thus, the null hypothesis which stated that there is statistically significant difference at (α ≤ 0.09) in the mean scores of grammar between the two groups was rejected. The mean scores of the grammar pre-test shown in table1 indicate that the mean scores of the experimental group were lower than the mean scores of the control, where the mean score of the experimental group was 55.88, while the mean scores of the control group was 66.76.

According to the data gathered from pre-test of each student I was able to categorize each student’s standard in their grammar skill. At the beginning anyone did not possess a good focus in grammar. In that basis I paid my careful attention on each student according their needs and level of learning.

4.2 Post-test

To the significance of these differences between the mean scores of both group in post-test, T test statistical procedure was computed as shown in Table2. The following table shows the marks obtained by the students in the pre-test for 100 marks.

<table>
<thead>
<tr>
<th>METHODS</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>T</th>
<th>Df</th>
<th>Sig.(2tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>POST</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inductive</td>
<td>62.80</td>
<td>25</td>
<td>12.305</td>
<td>-.343</td>
<td>24</td>
<td>.735</td>
</tr>
<tr>
<td>Deductive</td>
<td>64.04</td>
<td>25</td>
<td>14.076</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As can be from Table2, the experimental group’s means score on posttest was slightly different to the control group’s mean score on the same test (62.80; 64.04) respectively. It indicates that the T value of grammar achievement was -.343. Thus, the result show that there is no statistically significant at the level (α ≤ 0.05) between the mean scores of SLIATE students’ achievement in grammar due to teaching methods.

05. CONCLUSION AND RECOMMANTATION

This study found that deductive approach is more effective than inductive approach in teaching grammar. The inductive deductive methods in teaching the best method that can be used to teach grammar. This study attempts to find out the effect of using inductive and deductive methods on SLIATE students’ achievement in grammar and the researcher discuss the result that have been displayed in the previous section. This present discussion of finding of the study concerned with the effect of the experimental and control group. The result indicated there is statistical differences at the level (α ≤ 0.05) between the mean scores of the SLIATE students’ achievement in grammar due to teaching method. There are some reason why deductive approach is better than inductive approach. Student feel secure and attracted when they have to study the rule themselves with the teacher guidance. Moreover, in the deductive teaching grammar, the teacher states the rules and illustrated it with a written model. After that, students practiced the rules through some contextualized oral drills.

Conclusion

They study which is confined the effects of using inductive and deductive grammar approaches on SLIATE students. The results indicate that there are statistically significant differences between mean scores of SLIATE students' achievement in grammar due to the interaction teaching method. According to this, the results showed that the interaction teaching methods do not affect the means of
SLIATE students' achievement. The first conclusion to be drawn from this study is that the view that using new teaching method (inductive and deductive) in teaching grammar is beneficial to students' achievement in grammar and that may depend on the students’ level, their learning style, their teacher and their school location. Moreover, the result showed that the interaction teaching methods do not effect on the means of SLIATE students’ achievement, and this can be explained according to the period of using the new teaching method. The expected finding of the study indicates that the control groups and the teaching of English grammar through deductive approach plays a positive role in improving the academic achievement of the students studying English grammar in SLIATE. This research may help to talked further actions to dedicate effect of using grammar approaches through assessment as well as class room direct observation were the survey instrument to collect to terminate this dissertation.

Recommendation: According to the finding of the study, it suggests and recommend few words regarding the continuousness and proper provision of grammar knowledge to the students with the successful complete of study. Thus, an English library is of vital important to promote the learning of English. The pupils should guide to use the library. They should be shown how to refer a dictionary how to look for information for a particular question etc. This library should be equipped with attractive supplementary readers in English newspaper and other useful reading materials in English as well as model question paper with answer for students, audio video aids should come into play to enhance their learning process. These aids very important for the pupil to learn and correct their mistakes themselves. Instructor should vary the method use in teaching grammar to avoid the students’ boredom. It is necessary for instructors to vary their techniques and ways of teaching according to their students’ achievement levels with more emphasis on using the deductive way of teaching grammar. And they are encouraged to attend different intensive training courses held by minister of education in order to be aware of various modern way of teaching English grammar. Encourage researchers to undertake more studies to investigate the effect of using inductive and deductive methods on students’ achievement level in grammar on other educational levels and subjects. The researcher suggests that teachers be trained on the use of the inductive and deductive methods. Encourage English teachers to use these teaching methods in teaching English grammar to improve achievement level. Encourage the Ministry of the Education (schools' headmasters and teachers and supervisors) to create an encouraging atmosphere in the English classes to help students have positive attitudes towards EFL.

06. REFERENCE


