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RESEARCH ARTICLE

EFFECTIVENESS OF DEDUCTIVE AND INDUCTIVE METHODS IN TEACHING ENGLISH GRAMMAR AT ELEMENTARY LEVEL.

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Abstract

The present study is aimed to find out the effectiveness of Inductive and Deductive Methods in teaching English Grammar at Elementary Level. The study involves an experiment in which two sections of class VI containing 35 students each were selected for the study. Section A was taught through Inductive Method and Section B through Deductive Method. When Pre-test and Post-test scores of Inductive method were analysed, it was found out that teaching through Inductive method had a significant impact upon student achievement. Similar results were seen when the Pre-test and Post-test scores of Deductive Method were compared.

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Introduction:-

Language is one of the various criteria that distinguishes a man from other lower animals. One cannot think of human society without language. It is the language which helps a man to express his feelings, emotions, joys and sorrows. Different people in different countries make use of different languages. But among all these languages, the position of English language remains unique. English is the most widely spoken language of the world. It plays a vital role in producing and promoting changes and accepting new trends in the society. Majority of the standard journals and magazines are published in English. English generates modernity, imparts new knowledge and skills, and provides a formal system of living which is found in the advanced countries of the world. By ignoring this language, no nation can prosper and move shoulder to shoulder with the rest of the world. It is the language of the world in all fields such as arts, sciences, humanities, social sciences, international trade and commerce.

Among the various languages used in India, English occupies a dignified but delicate position. Language experts seem to be widely agreed that English learning is a very important aspect of life. India is a vast country with different languages in different parts of the country. These regional languages differ from each other so much that it is not possible to communicate with people of other regions without a common language. Further, India is growing on all fronts whether it is social or economic angle. India is on the road to become a strong and prosperous nation in the world. India is trying to maintain a good foreign policy. For all this, there is a need of a common language i.e. English. English is a language having an international status that can provide the best medium to interact with the outside world.

Role of Grammar in English Language:-

In spite of many popular statements and realizations, the reach of English language among the students is still a big problem. Except a few brilliant students from very popular and established institutions, the standard of English in our students is extremely poor and not encouraging. Majority of Indian students find themselves incapable of expressing their thoughts in English. They lack fluency in the language. In Maharashtra, it is being taught as a third

compulsory language. It is also found that the pupils can neither speak simple day-to-day English nor understand simple English spoken by an educated Indian English speaker. There may be many reasons for that but one main reason is that English grammar is not given due importance in classroom teaching from the elementary level. The students lack knowledge about the construction of sentences, the appropriate use of prepositions and the correct use of verbs and tenses.

If the language is considered to be a vehicle of one's thoughts and feelings then grammar is the machine by which that vehicle is set in motion. Hence, language communicates our thoughts and feelings and grammar drives language. Grammar is useful to develop the language skill in the students. It is practical analysis of the language. It gives an insight into the structure of language. Correct expression and systematic knowledge of the language is not possible without the proper knowledge of grammar. Thus there is no doubt that the knowledge of grammar helps in writing correct English.

Methods of Teaching Grammar:-

In spite of many methods, teachers resort to methods their teachers used decades ago. They teach the English language and literature in English in the same way their teachers did because they had acquired theories with very little practical teaching during their training. Following are some of the methods of teaching grammar:

Traditional Method:-

This method makes use of text books to teach grammatical rules. The teacher explains the rules with examples from the text books. Later exercises are given to test the knowledge of the students. However this method does not follow the maxims of teaching that is to proceed from known to unknown, simple to complex etc.

Incidental Method:-

It is also known as correlation method. As the name depicts grammar is taught incidentally by relating to the texts books, translation and composition.

Informal Method:-

In this method grammar is taught with the help of usage and not by rules. Hence, this method can also be used with the beginners.

Deductive Method:-

Deductive Method means to proceed from rules to examples. In this method rules are first taught to the student and the examples are given afterwards.

Inductive Method:-

In Inductive Method, examples are first given and rules are inferred later from those examples. This method gives students opportunity to work on their own.

Review of Related Literature:-

It is observed from the review that studies have usually implied both these methods to compare the relative effectiveness. Myers (1968) in his study has found out that whether teacher attitudes were potent factors in learning situations and if pupils achieve at relatively higher rates in situations where teachers personalities are compatible with the dominant mode of teaching expected of them. The specified modes of instruction being considered were Inductive vs. Deductive approaches. The material used to test the hypothesis was on Anthropology Curriculum Project (ACP) materials- one set using the deductive mode given to the experimental group and a second set written in an inductive mode given to the experimental group. Thirty teachers and their classes in seven school districts in five states comprised the sample. The major findings of the study indicated that there were no significant differences in achievement between the pupil teachers who taught deductively and those who taught inductively, and that several teachers' attitude patterns seem to relate to pupil achievement.

In studying the effectiveness of inductive versus deductive teaching approaches in helping high school second language (French or Spanish) students understand grammatical concepts Shaffer (1989) found that there were no significant differences between the two approaches, dispelling the long-held bias against Inductive Methods.

Ronald (1996) compared the results of the adult learning of English as a Foreign Language (EFL) using an inductive approach as opposed to a deductive one based on explicit contrastive analysis (CA) input. It is suggested that a deductive approach that uses CA input in EFL teaching and learning materials is more effective in minimizing error rates.

Marilyn (1999) found that students who received inductive feedback changed their largest percent of errors when given oral feedback and the students who received deductive feedback changed their smallest number of errors when given oral feedback.

Yuruk (2000) compared the effectiveness of inductive (part –to –whole) and deductive (whole –to- part) content sequences on students of chemistry their achievement, attitude toward chemistry and academic self- concept. Sixty two freshman students from a general chemistry course participated in this study. He found that students exposed to inductive content sequence achieved better than students exposed to deductive content sequence on essay type test when their science process skills, attitude towards chemistry and academic self -concepts before the treatment and pre- achievement were statistically controlled. However, there was no significant difference on their attitudes towards chemistry, academic self –concepts, short answer test achievement and multiple choice test achievement after the treatment when the above stated confounding variables were statistically controlled.

The comparative effectiveness of teaching English grammar with help of textbook (Deductive Method) and by using group work activities (Inductive teaching model) was studied by Aisha (2002). The study also attempted to see which of these two methods had a positive effect on the academic achievement of the elementary and secondary school students in Pakistan. Of the four 9th grade sections, two sections were randomly selected by the process of simple random sampling using draw method technique. Similar process was adopted in the case of 6th grade students. Then of the two selected groups at each level, one group was randomly assigned as the experimental and other as the control group. Similarly two teachers almost similar in respect of educational qualifications, age, training, teaching experience at the secondary level, socio-economic status and their reputation at the school were selected at the secondary level. One teacher was randomly assigned to the experimental and other to the control group. Similar procedure was adopted at the elementary level. The experimental group at each stage was taught English grammar through group work activities by using the inductive teaching model whereas the control group was taught English grammar through the textbook using the Deductive Method (traditional method).

At the end of the treatment period in the above study, relevant post-tests were administered to the students of the both groups at each stage and were scored. The main findings of the study were that the experimental and the control groups at the both the elementary and secondary stage were equivalent at the time of starting the experiment and the teaching of English grammar through the group work activities (inductive approach) played a positive role in improving the academic achievement of the students studying English at the elementary as well as the secondary stage.

Molly (2004) studied the effects of inductive and deductive teaching method, students' cognitive and affective characteristics and learning style on students' performance. Performance is measured by the scores on tests based on trade concepts and exercises in an introductory course in agricultural economics. Results suggested that inductive teaching increases students performance and that the learning is enhanced if inductive teaching is done prior to presenting general theories.

Naashia (2004) determined learners' attitudes to learning grammar through the use of two types of consciousness - raising tasks. A deductive task provided explicit explanations of a grammar structure, while an inductive task required learners to discover the grammar rules for themselves. The study investigated learners' preferences relating to deductive and inductive tasks and aimed to provide a learner perspective of the effectiveness of such tasks. The results indicated that learners viewed both task types to be useful and there was no obvious preference for one task type over the other.

In review of different teaching methods including inductive teaching methods, including inquiry learning, problem-based learning, case based teaching, discovery learning, and just-in-time teaching, Prince and Felder (2006) define each method, highlighted commonalities and specific differences, and identified the effectiveness of the methods. While the strength of the evidence varies from one method to another, Inductive Methods are consistently found to

be at least equal to and in general more effective than Deductive Methods for achieving a broad range of learning outcomes.

Adel and Abu (2008) investigated the effects of inductive and deductive method and the interaction between “the type of teaching approach” and “the use of the active and passive voice sentences” in English as a foreign language (EFL). Ninety-three freshman and junior university students participated in this study. They were chosen randomly from three classes in two universities in Jordan. The method of the study included a pretest, two lessons for each group in the three classes and a post test. The results of the study reveal a significant statistical result at level of 0.05 between the two approaches for the deductive group.

As could be seen from the discussion of the studies above, no clear results could be established whether the inductive approach is better than the deductive, or vice versa, or whether they actually have a difference when compared with the language skills of the learners. There are studies which revealed that there is no significant difference in the effectiveness of both methods (Naashia 2004, Shaffer 1989, Myers 1968) which means both are equally effective. Some studies indicated that Inductive Method (Marilyn 1999, Yuruk 2000, Prince and Felder 2006, Aisha 2002, Molly 2004) is a better method but there are studies which states the effectiveness of Inductive Method but the same study also indicates that for the present perfect tense, Inductive Method is not very effective. However, the study also shows that both methods are effective in teaching English verb tenses. The studies by Shaffer (1989) and Naashia Mohamed (2004) compared the effectiveness of inductive versus deductive teaching approaches and found no significant differences between the two approaches, dispelling the long-held bias against Inductive Methods.

Although quite much research has been done comparing the both methods, various studies have not shown big differences in favour of either one of them. Some have found supporting results for the one but then the other study shows better results for the other. So in view of the above the investigator has planned this project with a special intent to experimentally ascertain the tenability of certain hypotheses in respect of certain treatment related to teaching of English Grammar.

Significance of the Study:-

In spite of the fact that English is such an important language it is generally seen that the teaching of grammar to elementary school students is narrow one and defective in methodology. The importance of the present study can be seen in view of the prospective teachers who may be given practice in using the more effective method along with the other methods of teaching English. The findings of the study may be used by the curriculum planners and curriculum developers in suggesting the given method for effective teaching in English language. The future researchers can also conduct further research in this field by extending it to others levels, other subjects and other regions of the country. Moreover English as a subject is the area of investigator's personal interest and specialization.

So in the view of the above the investigator has planned this project with a special intent to experimentally ascertain the tenability of certain hypothesis in respect of certain treatment related to teaching of English Grammar. It is expected that the study will bring out the results that will help the teachers and practitioners in education to decide and adopt suitable strategies in teaching of English grammar.

Objectives:-

- a. To find out the effectiveness of teaching English Grammar through the Deductive Method.
- b. To find out the effectiveness of teaching English Grammar through the Inductive Method.
- c. To establish which of the two methods – Inductive and Deductive, is more effective in teaching of English Grammar.

Hypothesis:-

There is no significant difference in the effectiveness of Inductive and Deductive Methods in teaching English Grammar to Elementary School Students.

Sample:-

The study involves an experiment that needed continuous engagement of VI class of a school for at least 15 days. The investigator had consulted several schools for seeking the permission of conducting the experiment. Many schools were not agreeing to give the school for such a long time. A school, Govt.High School, Sundran of Derra Bassi region in Mohali district had agreed for the experiment. So this school was selected through Purposive Sampling technique. Two sections of class VI in the school, each containing 35 students were selected for the study. Section A was taught through Inductive Method and Section B was taught through Deductive Method for 15 working days at a stretch.

Statistical Technique:-

The collected data were analysed to find out the initial difference if any, between the pre-test scores of the group using t-test.

Tools used for the study:-

The present study required a test on Inductive and Deductive Methods in teaching English Grammar. As there was absence of any such standardized tool, the investigator developed the tools herself. The following tool was used in the study:

“Achievement Test in English Grammar for class VI students”

Findings and Discussion:-

The primary purpose of the study was to find out the effectiveness of the Inductive and Deductive Methods in teaching English grammar at elementary level. The data was analysed statistically to interpret and draw the conclusions keeping in mind the objective and hypothesis of the study. The results of the study have been presented through following headings:

Effectiveness of Inductive and Deductive Methods in Teaching English Grammar:-

One of the objectives of the present study was to establish which of the two methods- Inductive and Deductive, is more effective in teaching of English Grammar. Hypothesis 1 stated that ,” There is no significant difference in the effectiveness of Inductive and Deductive Methods in teaching English Grammar to Elementary school students.”

It is universally accepted that a better method of teaching can make the students understand and retain the content for a long period of time. But before coming out to the conclusion regarding the more effective method, it is essential to analyse the initial differences if any, between the learners of both the groups with regard to their academic achievement. It has been determined by studying the significance of the difference between the pre-test scores of both groups on academic achievement.

Table 1:- pre-test scores of both inductive and deductive group.

GROUPS	N	MEAN	S.D.	DF	T'VALUE
INDUCTIVE	35	8.32	3.92	68	0.97**
DEDUCTIVE	35	7.51	3.03		

** Not Significant at 0.01 Level

The findings in the above table reveal that the mean score of the group that was taught through Inductive Method was 8.32 and that of group taught through Deductive Method was 7.51. The S.D.s of these groups were 3.92 and 3.03 respectively. The calculated t- value from the data came out to be 0.97 which is less when compared with table values at 0.01 confidence level (2.65). It depicts that there was no significant difference in both groups at initial level. In other words, both the groups were homogeneous in terms of their achievement level at the start of the experiment.

Effectiveness of Inductive Method in Teaching English Grammar:-

One of our objectives was to find out the effectiveness of teaching English Grammar through Inductive Method. After taking the pre-test scores, the group was taught for fifteen days using Inductive Method and then same achievement test was administered again and post-test scores were obtained. Keeping in mind the objective it was necessary to establish if there was any significant difference in the pre-test and post-test scores of the group. So, here one is interested to know the significance of difference between Means in terms of a particular direction, i.e. gain from teaching through Inductive Method. Therefore, to determine the significance of difference between Means, a one t-test has been used.

Table 1.1:- pre-test and post-test scores of group taught through inductive method.

GROUP TAUGHT THROUGH INDUCTIVE METHOD	N	MEAN	S.D.	DF	T'VALUE
PRE – TEST	35	8.33	3.91	68	15.15**
POST-TEST	35	22.76	4.04		

** Significant at 0.02 Level

The findings in the above table reveals that the Mean score of group that was taught through Inductive Method at the initial level was 8.32 and after the treatment it was 22.75. The S.D. of scores of pre-test was 3.91 and of post-test was 4.04 respectively. The calculated t-value from the data is 15.15 which exceeds the table values at 0.02 confidence level i.e. 2.38 (as applicable to one-tailed test). It shows that there is significant difference in pre-test and post-test scores. The mean of post-test scores is greater than the mean of pre-test scores which depicts that students' academic achievement is better in post-test scores. It means the teaching through Inductive Method had a significant impact upon student achievement and the method was found to be effective in teaching English Grammar.

Effectiveness of Deductive Method in teaching English Grammar:-

The scores obtained during pre-test and post-test of the group has been tabulated and t-test(one-tailed) was applied to find out the effectiveness of teaching English Grammar through Deductive Method.

Table 1.2:- pre-test and post-test scores of group taught through deductive method.

GROUP TAUGHT THROUGH DEDUCTIVE METHOD	N	MEAN	S.D.	DF	T'VALUE
PRE - TEST	35	7.51	3.03	68	14.14**
POST-TEST	35	20.08	4.29		

The learners of Deductive group were pre-tested and post-tested similarly to learners of inductive group. The Mean score of Deductive group in pre-test came out to be 7.51 and in post-test group came out to be 20.08. The S.D. of pre-test came out to be 3.03 and of post-test 4.29. The calculated t-value from the data is 14.4 which exceed the table values at 0.10 confidence level (1.67). it shows that there is significant difference in pre-test and post-test scores. The Mean of post-test scores is greater than Mean of pre-test scores which depicts that students academic achievement is better in post-test scores. It means the teaching through Deductive Method has a significant impact upon students' achievement and the method was found to be effective in teaching English Grammar.

Post-test scores of both Inductive and Deductive groups on Academic Achievement:-

In continuation to the effectiveness of the Inductive and Deductive Method in teaching English Grammar separately, further the relative effectiveness of both the methods was established by finding significant difference in the post test scores of both these methods.

Table 1.4:- post-test scores of the groups taught through inductive method and deductive method.

GROUPS	N	MEAN	S.D.	DF	T'VALUE
INDUCTIVE	35	22.75	4.04	68	2.67**
DEDUCTIVE	35	20.08	4.29		

** Significant at 0.01 Level

The findings in the above table reveals that the Mean score of group that was taught through Inductive Method is 22.75 and that of group taught through Deductive Method is 20.08. The S.D.s of the group were 4.04 and 4.29 respectively. The S.D. of the group taught through Inductive Method is less than S.D. of group taught through Deductive Method. It means the group taught through Inductive Method is more stable than the other group. The calculated t' value from the data came out to be 2.67 which is higher when compared to the table values at 0.01 confidence level (2.65) which depicts that there is significant difference in scores of both groups after the treatment. The mean scores of group that was taught through Inductive Method was higher (22.75) than the group that was taught through Deductive Method(20.08). Hence the group that was taught through Inductive Method performed

better than group that was taught through Deductive Method. Therefore, the null hypothesis stating “there is no significant difference in the effectiveness of Inductive and Deductive Method in teaching English Grammar to elementary school students” stands rejected.

It can be concluded from the findings above that Inductive Method is better than Deductive Method in teaching of English Grammar. The findings of the study are supported by some previous studies conducted abroad by Masahiro (2008), Carol (2007), Prince and Fedler (2006) and Aisha (2002) which also indicated that Inductive Method is more effective than Deductive Method in teaching English Grammar. This shows that the results shown with respect to the effectiveness of Inductive method as compared to deductive Method, holds true in India as in some other countries.

Conclusion:-

Pre-test scores of Inductive and Deductive were subjected to ‘t-test’ analysis and it was found that there was no significant difference in both groups at initial level.

When Pre-test and Post-test scores of Inductive method were analysed, it was found out that teaching through Inductive method had a significant impact upon student achievement. Similar results were seen when the Pre-test and Post-test scores of Deductive Method were compared.

The Inductive Method came out to be better than Deductive Method in teaching of English Grammar. The findings of the study re supported by some previous studies conducted abroad by Masahiro (2008), Carol (2007), Prince and Fedler (2006) and Aisha(2002) which also indicated that Inductive Method is a more effective than Deductive Method in teaching English Grammar. This shows that the results shown with respect to the effectiveness of Inductive method as compared to Deductive, holds true in India as in some other countries.

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