

Investigating the effectiveness of deductive vs. Inductive instructional approaches on learning modifiers to enhance descriptive writing skills



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ABSTRACT

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Numerous techniques and methodologies have been explored to foster descriptive skills in the writing of second language learners. However, learners continue to struggle due to their limited ideas and vocabulary. The present experiment uses modifiers as a tool to achieve the stated objectives. The intention of this investigation is to determine the efficacy of deductive and inductive instructional methodologies in enhancing learners' descriptive writing skills with regard to modifiers. A true experimental design was employed to select two random groups of participants out of 15 groups whose English proficiency test scores exceeded the required score. A total of 135 first-year tertiary learners participated. The study employs a quantitative approach to obtain data from the experimental teams' pre- and post-test results. Using the SPSS program, a paired sample t-test and an independent sample t-test were performed as part of the statistical analysis of the data. The findings indicated that the group of students who encountered the inductive instructional method exhibited a greater frequency of modifiers in their descriptive writing compared to the group of students who got exposed to the deductive approach.

Contribution/Originality: The study focuses on the effectiveness of deductive and inductive methods. Previous studies have improved descriptive writing skills by utilizing various grammar structures, such as the simple present tense, relational verbs, and adjectives. Additionally, this study significantly contributes to the field of descriptive writing skills, emphasizing that learning modifiers can further enhance these skills.

1. INTRODUCTION

According to Gelb (1963) the use of traditional written language serves to enhance the efficacy of human communication. However, written language is deemed to be the hardest language ability to learn compared to other language skills due to the difficulty of transferring thoughts and ideas onto paper. Furthermore, according to Purnomo (2014) assertion is the acquisition of proficiency in vocabulary and verb tenses and is an essential component of generating high-quality writing. To construct coherent sentences and paragraphs, students must select appropriate vocabulary and arrange it accordingly. Moreover, learners must use appropriate tenses to convey events within a given timeframe. The development of writing proficiency is a vital component that students must strive to accomplish. Academic writing can be divided into four main categories: critical, analytical, persuasive, and descriptive. Every written communication category has its own unique language traits and goals. This study concentrates solely on the development of descriptive writing skills as per Purnomo (2014) who asserted that

students often struggle to provide detailed descriptions of people, places, and things due to a lack of ideas when prompted to do so. In addition, learners showed evidence of apathy and boredom when their teachers asked them to write a descriptive text; therefore, the study used an inductive approach to teach modifiers so that students would willingly employ them when writing a descriptive text.

1.1. Background Context

Brown (2000) asserted that the subject of grammar learning has always been a prominent focus of research in the field of language teaching. Huang (2005) stated that the main goal of teaching grammar is to provide learners with the skills to achieve linguistic proficiency and effectively use grammar to understand and produce fluent, impactful, and accurate spoken and written communication. Although most scholars concur that grammar is important, they have somewhat different opinions on how it should be taught in language classes. Nassaji and Fortos (2011) stated that it is always an unresolved and contentious matter in the realm of language acquisition whether the teaching of grammar should be conducted using deductive or inductive methods. This indicates that the discussion has consistently revolved around the methods of teaching grammar, either by clearly presenting grammatical rules or by implicitly exposing learners to meaningful language usage. Several studies have indicated that deductive procedures are preferable (Erlam, 2003; Nazari, 2012; Seliger, 1975) while others have presented a strong argument for the effectiveness of inductive approaches (Fahim & Azarniوشي, 2011; Herron & Tomasello, 1992; Rokni, 2009). Intending to resolve this issue, this study examines both deductive and inductive instructional approaches concerning particular grammatical concepts.

1.2. Statement of the Problem

According to the National Secretary of the English Language Teachers' Association of India (ELTAI) (Elango & Devi, 2022) learners have struggled with writing skills for a long time because they have relied on rote learning or a grammar-based approach that covered parts of speech, subject-verb concordance, punctuation, capitalization, and other minor issues that stopped their innovative thoughts and ideas. Experts agreed that proper sentence construction in writing is impossible to achieve without learning grammar. Therefore, to address the issues encountered by learners, this study employed the inductive approach, which is a pedagogical method that prioritizes the learner and aims to improve their writing abilities by teaching grammar.

1.3. Research Gap

After examining the pertinent literature, it can be concluded that very little study has been done on the subject of learning modifiers to enhance language proficiency (Chen, Ye, He, & Yao, 2022; Labrador, 2022; Toksöz, 2020). The object of the current study is to bridge this gap by assessing two different strategies to strengthen descriptive writing abilities through the acquisition of modifiers, namely inductive instruction and deductive instruction.

1.4. Objectives

The primary objective of this research is to determine if there is a substantial difference between the outcomes of learning modifiers through deductive and inductive instructional approaches. Furthermore, the study endeavors to evaluate the utility and efficacy of these two approaches in the context of language classrooms. The study's ultimate goal is to identify whether the findings of the statistical evaluation of the data obtained from the pre- and post-test outcomes are consistent with one another or whether there is a discrepancy between them.

1.5. Research Questions

The following queries were addressed in the current study:

1. Does learning modifiers through the deductive method have a statistically significant improvement on descriptive writing skills among tertiary level ESL learners?
2. Does learning modifiers through an inductive method have a statistically significant improvement on the descriptive writing skills among tertiary level ESL students?
3. Do tertiary level ESL learners differ statistically significantly regarding the learning modifiers they acquire from deductive and inductive instructional methods regarding their descriptive writing skills?

2. LITERATURE REVIEW

2.1. Review of Learning Modifiers

Chen et al. (2022) assessed the impact of three different teaching methods (deductive, inductive, and inductive-deductive) on enhancing the ability of Chinese EFL students to utilize request modifiers. Subsequently, the researchers employed written discourse completion tasks and interviews to gather data on Chinese EFL students. The findings showed that English as a Foreign Language (EFL) lessons need to be given in real-life situations and that the inductive-deductive method is better at teaching useful skills during training. In addition, since this study integrates the findings of the experiment with the learners' perceptions, it is advisable to provide both deductive and inductive instructions to accommodate the learners' preferences for instructional styles and learning requirements.

Labrador (2022) examined a significant aspect of descriptive modifiers to enhance student instructors' understanding of the genre and encourage them to utilize commonly used terms and phrases. Since this study utilized a corpus to identify many fundamental components, which were further categorized and analyzed to discern grammatical patterns and compile a list of their most prevalent collocations, it is advisable to utilize a sketch engine for both the compilation of the corpus and the retrieval of word sketches for each modifier. This helps to acquire a deeper understanding of the language used in stories, which can assist trainee teachers in recognizing the distinctive language features found in texts aimed at children and enhancing their storytelling skills.

Raman (2016) asserted that the amalgamation of literature and cinema stimulates students' inclination to acquire new terminology. In a similar vein, Toksöz (2020) experimented to ascertain if the integration of audio-visual and written input methods or just written input approaches is more efficacious in facilitating learners' comprehension of modifiers. Consequently, the findings suggested that the students in the experimental team, who received both audio-visual information (film) and written input (novel), exhibited superior learning of modifiers compared to the students in the control group, who only received written input (novel). Therefore, teachers should incorporate audio-visual resources, such as films, short movies, or video clips, into their teaching plans.

2.2. Review of Deductive Approach

Wang (2012) conducted a study in which field-independent and field-dependent students were divided into two groups depending on their level of English ability. After receiving instruction on different grammatical concepts, the students engaged in language skill practice. Conversely, inductive teaching allows students to express and generalize grammatical rules by seeing the actual usage of language in real-life scenarios. Based on the data, it can be stated that both tactics yielded favorable results. However, the deductive group showed a more significant improvement, asserting that the deductive technique has the benefit of preventing learners from constantly committing the same errors. Similarly, some theories (Boyle, 1994; Ruin, 1996) also argue that the lack of explicit teaching for learners might lead to the permanent preservation of their faults in their interlanguage.

Nazari (2012) investigated the impact of implicit and explicit grammar training on the learning of the present perfect tense among Iranian language learners. The results of the grammar exam and written test, which included multiple-choice and sentence-building questions focused on tenses, demonstrated that direct instruction of grammar

was more effective than indirect instruction in both the active and passive learning modes. A study conducted by [Andrews \(2007\)](#) validates the findings of this study.

In addition, [Erlam \(2003\)](#) conducted a study on 69 high school students from New Zealand who were acquiring knowledge of direct object pronouns in the French language. The research demonstrated the distinction between deductive grammar training, which entails presenting rules and providing metalinguistic knowledge, and inductive instruction, which emphasizes form without explicit grammar instruction. A comparison was made between the efficacy of these two forms of training in terms of both understanding and productivity. The study also examined the correlation between the instructional method and the morphological and syntactic aspects related to the learning of direct object pronouns in French as a second language. The findings demonstrated a notable benefit for the group that received deductive training.

Research has been focused on investigating the perceptions of English teachers and students regarding the instruction of grammar. According to [Deng and Lin \(2016\)](#) teachers believe that meaning should take precedence over form in language instruction. When contrasting the deductive versus inductive ways of teaching English grammar, the prevailing preference among teachers is for the deductive method. Regarding the students' thoughts about grammar, they have favorable opinions of both communicative and traditional grammar.

2.3. Review of Inductive Approach

Although some studies indicate that deductive instruction may have more advantages than inductive instruction, other research has demonstrated that the benefits of an inductive method outweigh those of a deductive approach. [Herron and Tomasello \(1992\)](#) concentrated on teaching 26 American university students who were studying French at beginner level 10 different French language patterns. The individuals who were receiving inductive teaching started their learning process with contextualized oral exercises. The students were assigned the job of deducing the underlying grammatical structure independently, without assistance from the teacher. Conversely, the participants who received deductive therapy were initially provided with a clear rule and thereafter instructed to apply it in a practical speaking exercise. Subsequently, all the students were assessed the day after and one week following the instruction using a gap-fill exam. Both groups of students were compared, and the students who had been exposed to inductive instruction obtained greater results compared to their classmates who had been taught deductively.

[Benitez-Correa, Gonzalez-Torres, and Vargas-Saritama \(2019\)](#) compared deductive and inductive techniques for teaching EFL grammar to high school students. Inductive education started with implicit instruction and exercises that helped students learn grammar subconsciously. There were easy substitution drills and more advanced ones, such as creative writing or visual aid descriptions. In contrast, in deductive teaching, students might raise questions and obtain peer responses. After the intervention, each student took a post-test. Compared to deductive reasoning, the inductive findings were better. [Dang and Nguyen \(2013\)](#) recommend teaching grammatical concepts indirectly, which supports the findings. However, other research has shown that the deductive approach is better at teaching grammar ([Deng & Lin, 2016](#); [Mohammed & Jaber, 2008](#); [Negahdaripour, 2016](#)) while others have found no significant difference. [Larsen-Freeman \(2015\)](#) suggested that repeated examples may push students to derive a principle, yet linguistic patterns may be stored in the brain and resurface when they need to use the language.

[Fahim and Azarnioushi \(2011\)](#) investigated the potential correlation between the critical thinking skills of language learners and their performance. They employed both rule-driven and discovery-based learning methods to teach grammar. The study's findings demonstrated a direct and favorable relationship between the learners' critical thinking aptitude and their grammar exam scores when the inductive teaching approach was employed. The deductive teaching style did not reveal any discernible correlation between the learners' critical thinking abilities and their grammar exam scores.

Rokni (2009) carried out a study on Persian learners of English to investigate the impact of explicit-deductive and explicit-inductive teaching approaches on the acquisition of relative clauses in English. Before the post-test, participants were provided with instructions. The examination comprised tasks that required a combination of sentences and the evaluation of grammaticality. The findings showed that the Iranian learners demonstrated higher levels of competency when they received explicit-inductive training as opposed to explicit-deductive instruction.

3. METHODOLOGY

3.1. Participants

First year tertiary level ESL learners from Vellore Institute Technology participated in this study. Learners who passed the English Proficiency Test were selected as the study population, and they were divided into 15 groups who enrolled in Technical English Communication. A simple random sampling method was used to select two classes of participants out of the 15 groups. A total of 135 first-year tertiary students (106 males and 29 females) participated in this study. There were 69 individuals in Experimental Team 1 and 66 in Experimental Team 2. Their ages ranged between 17 and 19 years. The participants had been learning grammar for more than 12 years, but they had still not attained the purpose of learning grammar. Experimental team 1 was assigned to the deductive approach and Experimental Team 2 to the inductive approach to evaluate the differences in their learning and accomplish the purpose of acquiring the grammar aspect between the two methods.

3.2. Procedure

Students whose English Proficiency Test scores exceeded the pass score were selected and they were assigned to one of two random experimental teams using a true experimental design. First, pre-tests were conducted for both groups using questionnaires to check their knowledge of descriptive writing skills using grammar aspects, but it was found that their writing did not provide any visual image in readers' minds because common words, such as good, big, happy, very excellent, really boring, completely different, easily, etc., were used, which made their writing monotonous. They were therefore encouraged to learn modifier words to improve their descriptive writing skills.

Two distinct instructional methods were chosen—the deductive instructional method and the inductive instructional method—for two different classes to see the efficacy of using appropriate modifiers in descriptive writing skills. Experimental team 1 learned modifiers using the deductive approach, and Experimental Team 2 learned modifiers using an inductive approach with more written exercises and collaborative learning. After the intervention, post-tests were conducted for both groups using the same questionnaire to identify differences between the two approaches. The participants' answers were analyzed and scored according to the rubrics created by the researchers.

3.3. Deductive Approach

Following the pre-test, the researchers concluded that the participants ought to be instructed in the proper usage of modifier words. For that purpose, the grammar instruction approach chosen for Experimental Team 1 was the deductive approach. To enhance their descriptive writing skills, the rules and various types of pre- and post-modifiers were explained with examples given, and authentic reading materials were provided that were drawn from the International English Language Testing System and Test of English as a Foreign Language vocabulary, such as adjectives and adverbs.

3.4. Inductive Approach

After the pre-test, Experimental Team 2 was guided toward the inductive educational technique. To help learners internalize these norms, examples were given, and the participants were asked to classify the pre- and post-

modifiers in the phrases, as well as identify the adjectives and adverbs. Authentic reading materials were given that were derived from the International English Language Testing System and Test of English as a Foreign Language vocabulary, such as adjectives and adverbs. Finally, some exercises were set to enhance the participants' descriptive writing skills from those authentic materials, such as the substitution of common adjectives with more precise modifier words, the identification of missing modifiers within a paragraph, the depiction of a person's physical appearance, and the use of quantifiers to describe images. Additionally, a peer learning environment was established whereby individuals shared their perspectives with fellow group members by using the modifiers when analyzing an image.

3.5. Rubrics for Assessing Descriptive Writing Skills

Rukmini and Saputri (2017) used five-point scale rubrics to assess writing skills that were adopted and modified accordingly to create parameters for descriptive writing skills, which helped to measure the modifiers and grammar of the learners before and after the intervention. The ability to write descriptively was rated on a five-point scale using appropriate modifier words with proper grammar usage, ranging from the ability to use appropriate modifiers with proper grammar usage to the ability to use appropriate modifiers with correct usage of grammar and semantic accuracy in sentences.

Table 1 presents the rubrics used to assess descriptive writing skills. A 5-point Likert scale was used, and assessment criteria were assigned accordingly.

Table 1. Rubrics for assessing descriptive writing skills.

5-point Likert scale	Criteria
5 points	<ol style="list-style-type: none"> 1. Uses a number of appropriate modifier words with proper grammar usage. 2. Uses a lot of effective figurative language. 3. Has correct spelling and punctuation.
4 points	<ol style="list-style-type: none"> 1. Uses appropriate modifier words with your grammar usage. 2. Uses figurative language. 3. Has mostly correct spelling and punctuation.
3 points	<ol style="list-style-type: none"> 1. Uses modifier words with few errors in grammar. 2. Uses less figurative language. 3. Contains some spelling and punctuation errors.
2 points	<ol style="list-style-type: none"> 1. Learner tries to use modifiers. 2. Learner may try to use figurative language. 3. Contains errors in grammar usage sometimes make understanding difficult.
1 point	<ol style="list-style-type: none"> 1. Learner does not try to use modifier words. 2. Learner does not include figurative language. 3. Contains frequent errors in grammar usage, spelling, and punctuation.

4. RESULTS

4.1. Results of the Pre- and Post-Tests of Experimental Team 1 (Deductive Approach)

The pre- and post-test results of Experimental Team 1 were compared using a paired sample t-test to examine whether the deductive instructional approach had an influence on learning modifiers.

Table 2. T-test outcomes from the pre- and post-test results of experimental team 1.

Group	N	\bar{x}	SD	Df	t	p
Pre-test	69	13.319	1.761	68	10.310	0.000
Post-test	69	16.029	2.223			

Table 2 reveals that there is a substantial difference ($p = 0.000$) between the pre- and post-test results of Experimental Team 1 ($p \leq 0.05$). According to Cohen (1988) the magnitude of the differences in means had a substantial effect ($\eta^2 = 0.55$). Dr. Lee A. Becker's webpage (<https://www.uccs.edu/lbecker/>) at UCCS

(University of Colorado, Colorado Springs) was employed for effect size estimations. Students who learned pre- and post-modifiers through a deductive method performed better in the post-test, as shown in the table above.

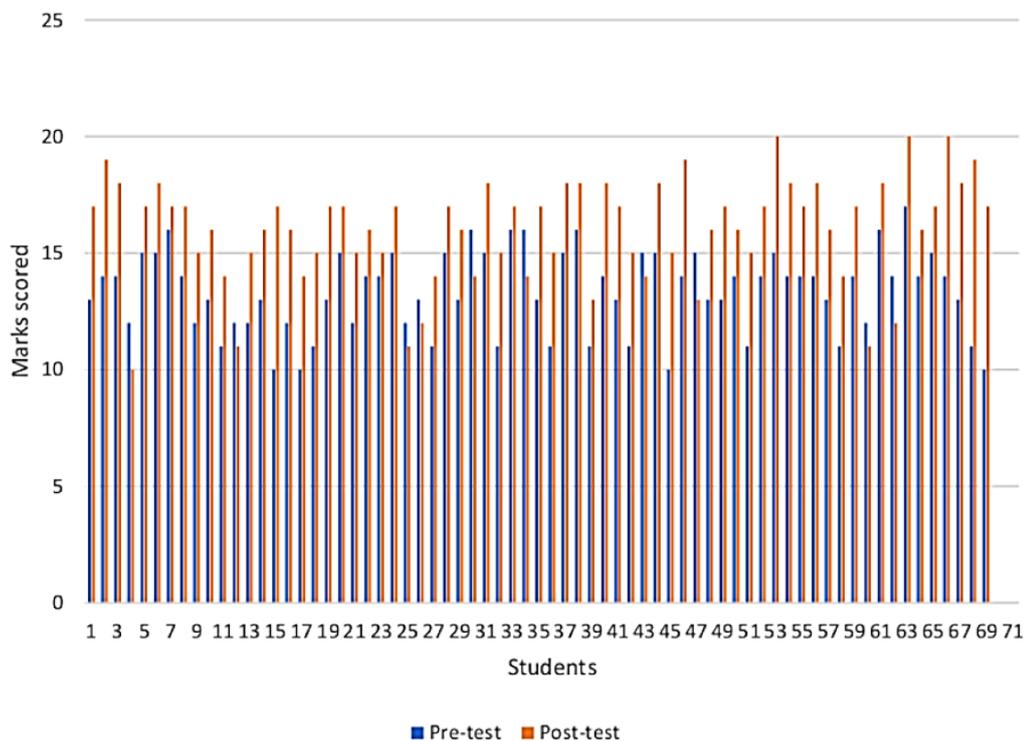


Figure 1. Graphical representation of experimental team 1's pre- and post-test results.

Figure 1 illustrates the findings obtained from the pre- and post-tests conducted on Experimental Team 1, which was exposed to the deductive approach. It can be observed that the majority of the orange bars exhibit slightly higher scores in comparison to the blue bars, indicating that most students demonstrated a minor improvement in their post-test compared to their pre-test.

4.2. Results of the Pre- and Post-Tests of Experimental Team 2 (Inductive Approach)

Experimental Team 2's pre-test and post-test results were compared using a paired sample t-test to see if an inductive method has a significant effect on how they learn pre- and post-modifiers.

Table 3. T-test outcomes from the pre- and post-tests of experimental team 2.

Group	N	\bar{x}	SD	Df	t	p
Pre-test	66	13.182	1.937	65	16.033	0.000
Post-test	66	18.712	2.676			

Table 3 demonstrates a substantial disparity ($p = 0.000$) in the pre-test and post-test outcomes of Experimental Team 2. Cohen (1988) found that the changes in means had a significant impact, with an eta squared value of 0.76. Dr. Lee A. Becker conducted the impact size estimates on the UCCS (University of Colorado, Colorado Springs) website. The students who were taught pre- and post-modifiers using an inductive approach achieved higher scores in the post-test.

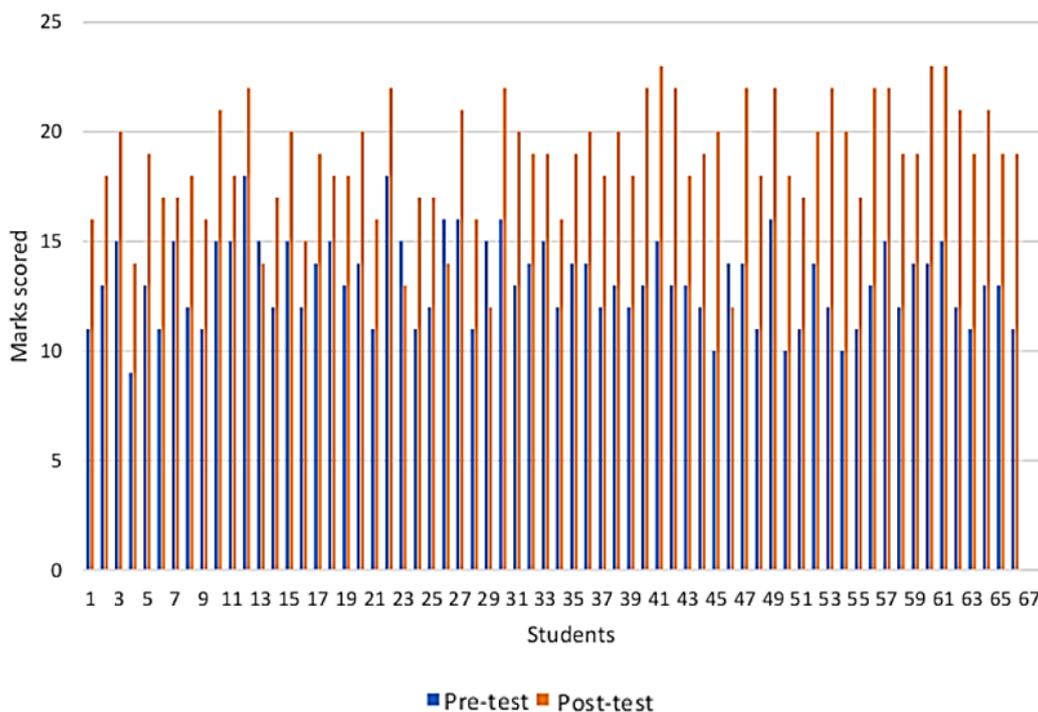


Figure 2. Graphical representation of experimental team 2's pre-test and post-test results.

According to the inductive approach, Experimental Team 2 took a test before and after the inductive approach, which is shown in Figure 2. The vertical line on a scale ranging from 0 to 25 represents the marks obtained by each student, while the horizontal line represents the students themselves. In Experimental Team 2, the blue shade bar signifies the pre-test outcomes, while the orange shade bar indicates the post-test findings. From the diagram, it is evident that the orange bar predominantly displays higher scores than the blue bar, suggesting that most students showed significant improvement in their post-test performance compared to their pre-test performance.

4.3. Pre-test Results of Experimental Team 1 and Experimental Team 2

The pre- and post-test results of Experimental Teams 1 and 2 were compared to determine if these two groups were homogeneous at the start of the investigation. Since the assumptions for parametric tests were proven to be correct, an independent sample T-test was used to compare how the group did on the pre-test before the intervention.

Table 4. T-test outcomes of the pre-tests from experimental team 1 and experimental team 2.

Group	N	\bar{x}	SD	Df	t	p
Experimental 1	69	13.319	1.761	133	-0.430	0.668
Experimental 2	66	13.182	1.937			

Table 4 indicates that the pre-test results of Experimental Teams 1 and 2 do not exhibit a statistically significant difference ($p = 0.668$). Consequently, the groups exhibited homogeneity at the commencement of the investigation. Hence, any disparity or enhancement observed in the post-test outcomes of both teams can be attributed to the intervention.

4.4. Post-Test Outcomes of Experimental Team 1 and Experimental Team 2

This section examines the post-test outcomes of both experimental teams to determine if there is a substantial disparity in learning pre- and post-modifiers using two distinct methodologies. The post-test outcomes of the groups were compared using an independent sample t-test following the intervention.

Table 5. T-test results of the post-tests from experimental team 1 and experimental team 2.

Group	N	\bar{x}	SD	Df	t	p
Experimental 1	69	16.029	2.223	133	6.346	0.000
Experimental 2	66	18.727	2.704			

Table 5 demonstrates a substantial disparity ($p = 0.000$) in the post-test outcomes of both teams. Cohen (1988) found that the size of the mean differences had a substantial effect, with an eta squared value of 0.47, indicating statistical significance. Dr. Lee A. Becker performed the impact size estimates on the UCCS (University of Colorado in Colorado Springs) website. The information in the table shows that using an inductive approach to learn about pre- and post-modifiers improves descriptive writing skills and gives a deeper understanding of modifiers compared to a deductive approach. Given the substantial effect size of 0.47, it can be inferred that the considerable difference observed was not a result of random chance. Hence, the difference in averages is a direct outcome of the inductive approach.

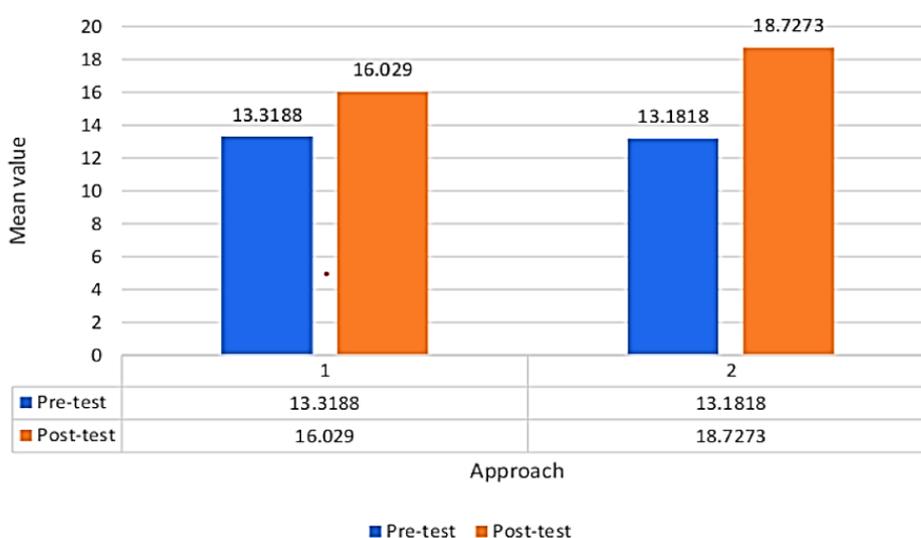


Figure 3. Graph illustrating the differences in results between experimental team 1 and experimental team 2.

Figure 3 illustrates the pre-test outcomes for Experimental Teams 1 and 2. The graph demonstrates the disparities between deductive and inductive instructional methodologies regarding the mean value. The number 1 on the horizontal axis represents the deductive approach group, the number 2 represents the inductive approach group, and the range of 0 to 20 on the vertical axis represents the mean value of both approaches. In the pre-test, Experimental Team 1 has an approximate value of 13.3188, and Experimental Team 2 has an approximate value of 13.1818.

In contrast, Experimental Team 1 exhibited a modest increase in their mean value to 16.029 during the post-test. In a similar vein, Experimental Team 2 exhibits a significantly increased mean value of 18.7273. As illustrated in the bar graph, there are notable disparities in the post-test outcomes between the two techniques. However, upon comparison, it becomes evident that individuals who were exposed to the inductive strategy showed a significantly superior performance compared to those who were exposed to the deductive approach.

4.5. Deductive Group Feedback

In this study, a substantial numerical value was utilized to explain the feedback.

Table 6. Feedback questionnaire for experimental team 1.

S. No.	Question	Yes	%	Maybe sometimes	%	No	%
1	Are you encouraged to participate in a grammar instructional class?	18	26.08%	23	33.33%	28	40.58%
2	Are you excited to learn more about modifiers?	17	24.64%	25	36.23%	27	39.13%
3	Do you feel confident when asking for further explanation?	19	27.54%	27	39.13%	23	33.33%
4	Would it be possible for you to use some modifiers in your writing?	13	18.84%	27	39.13%	29	42.03%
5	Are you able to identify and acknowledge your errors during the process of learning?	15	21.73%	28	40.58%	26	37.68%
6	Are you encouraged to learn new grammar aspects through a deductive approach?	24	34.78%	23	33.33%	22	31.88%
7	Do you believe that mastering grammar is essential?	14	20.29%	28	40.58%	27	39.13%

Table 6 presents the feedback from the group that followed the deductive approach and reveals that 28 out of 69 students exhibited a lack of motivation to engage in a grammar instructional class. In response to the second question, 27 out of 69 students expressed a lack of enthusiasm to further explore modifiers. In relation to the third inquiry, 27 out of 69 students possess a moderate level of confidence when seeking more information. The results of the fourth question indicate that 29 out of 69 students failed to use modifiers in their written compositions. The responses to the fifth question indicate that 28 out of 69 students demonstrated the ability to recognize and acknowledge their errors to some extent throughout the learning process. In the results obtained from the sixth question, it was observed that 24 out of 69 students expressed being motivated to acquire knowledge of new grammar aspects using a deductive instructional approach. The seventh inquiry shows that 28 out of 69 students indicated their belief in the occasional necessity of acquiring grammatical knowledge in the English language, suggesting that students are less motivated to acquire grammar using the deductive method.

4.6. Inductive Group Feedback

A relatively minimal numerical value was used to explain the feedback.

Table 7. Feedback questionnaire for experimental team 2.

S. No.	Question	Yes	%	Maybe sometimes	%	No	%
1	Are you encouraged to participate in a grammar instructional class?	22	33.33%	28	42.42%	16	24.24%
2	Are you excited to learn more about modifiers?	23	34.85%	26	39.39%	17	25.76%
3	Do you feel confident when asking for further explanation?	25	37.87%	22	33.33%	19	28.78%
4	Would it be possible for you to use some modifiers in your writing?	28	42.42%	23	34.85%	15	22.73%
5	Are you able to identify and acknowledge your errors during the process of learning?	22	33.33%	28	42.42%	16	24.24%
6	Are you encouraged to learn new grammar aspects through an inductive approach?	29	43.94%	21	31.82%	16	24.24%
7	Do you believe that mastering grammar is essential?	25	37.87%	22	33.33%	19	28.78%

Table 7 presents the feedback results obtained from the group that implemented the inductive approach. It shows that a minority of students, specifically 16 out of 69, had little motivation to engage in a grammar instructional class. In response to the second question, 17 out of 69 students expressed a lack of enthusiasm toward

learning further modifiers. Regarding the third query, only 19 out of 69 students lacked confidence when requesting clarification. In response to the fourth question, 15 out of 69 students failed to incorporate modifiers in their writing. The findings of the fifth question revealed that 16 out of 69 students could not identify and confess their mistakes during the learning process. According to the results of the sixth question, only 16 out of 69 students were deterred from engaging in inductive grammar acquisition. The seventh inquiry indicated that only 19 out of 69 students believed that acquiring knowledge of grammar in the English language was not a crucial aspect. The data indicates that students using the inductive technique exhibit a greater desire to study grammar.

The responses were categorized into three scale groups: "Yes" as scale 1, "Maybe sometime" as scale 2, and "No" as scale 3.

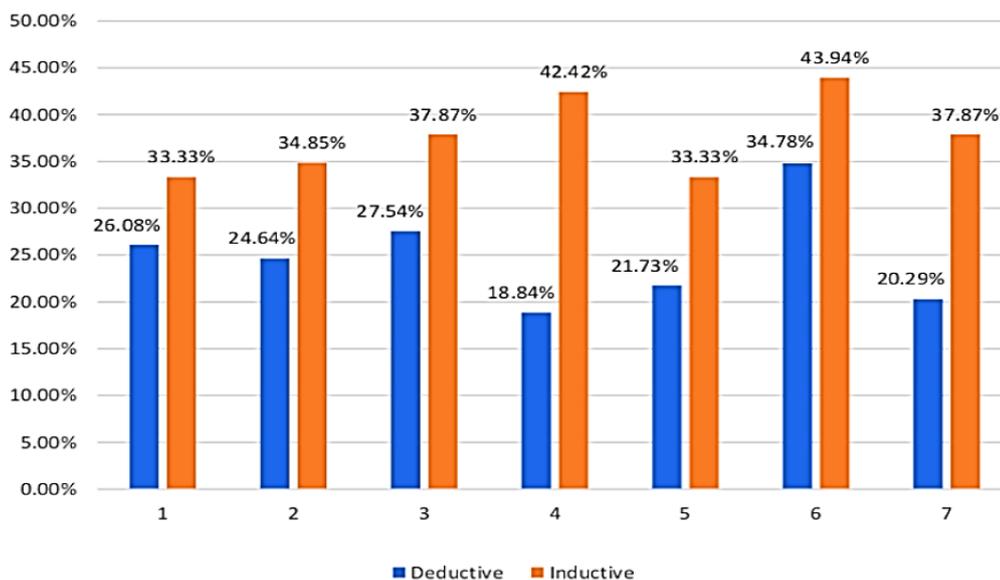


Figure 4. Graph illustrating the feedback results of experimental team 1 and experimental team 2.

Figure 4 depicts the feedback outcomes obtained from the students on the deductive and inductive teaching methods. In order to arrive at a conclusion based on the feedback, a bar graph was created using the average response on scale 1. The total number of students in each group was converted into percentages to ensure a fair and accurate comparison. In the bar graphs, the responses of the students are represented as percentages over the vertical line, while the number of questions is represented in the horizontal line. The blue bar represents the students employing the deductive technique, while the orange bar represents the students adopting the inductive approach. From the bar graph, it is evident that the blue bars consistently exhibit smaller values in comparison to the orange bars. This indicates that the new instructional technique was more successful in capturing the attention of the students compared to the traditional instructional technique. In summary, the feedback data indicates that the inductive technique generated a higher level of student interest in comparison to the deductive approach.

5. DISCUSSION

Following the results of this investigation, Experimental Teams 1 and 2 had nearly identical mean scores in the pre-test. This indicates that both teams had similar knowledge of the modifiers before being exposed to the intervention. The progress of each group was evaluated using a t-test conducted with SPSS software. Both the deductive and inductive approaches demonstrated a substantial improvement over the pre-tests, following the outcomes of the paired sample t-test. However, the independent sample t-tests demonstrated a substantial differentiation in the post-test outcomes between Experimental Team 1 and Experimental Team 2. Nevertheless, the pre-test outcomes of both teams did not exhibit any significant difference ($p = 0.668$). The findings suggest that

both methods improved students' usage of modifiers in their descriptions, but those in Experimental Team 2, who were instructed to use the inductive method, used a higher number of appropriate modifier words in their descriptions than those in Experimental Team 1, who were instructed to use the deductive method. Since the groups had similar pre-test results, the considerable discrepancy in their post-test results could be attributed to the method used. Similarly, [Rungwaraphong \(2021\)](#) discovered that employing inductive teaching methods yields advantages in enhancing business English writing in an English as a Foreign Language (EFL) setting.

5.1. Limitations and Suggestions for Further Studies

The present study was limited to computer science and engineering students and enabled learners to describe or define a product appropriately using modifiers. The fragility of this study is that it was restricted to the Vellore Institute of Technology (VIT), which has various educational and social aspects. When the population is selected from various fields of study, it is possible that learners' literacy and written language skills will vary. For example, if further studies were carried out at various government and private colleges, the outcome would be different. Moreover, further research could be done among literature students to enhance their fictional writing skills by using modifiers. Another limitation of the current study is that it focused on writing, particularly descriptive writing, so future studies could use modifiers to improve listening, reading, and speaking skills through different tasks and activities. A further limitation is that learning modifiers alone through an inductive method is a completely learner-centered approach. However, future studies could focus on learning a wide range of grammatical elements through an inductive method. Furthermore, to address the limitations of this study's four-week timeframe, future research can spend time engaging with participants and incorporate extended intervals between different stages. Since this study examined how first year college students learn English adjectives and adverbs, a similar study of first year college students could also examine figurative language, conjunctions, determiners, interjections, etc.

Considering the outcome of this study, the ensuing suggestions could be: It is recommended that English instructors at the tertiary level, as well as at other levels, prioritize the establishment of a peer learning environment that fosters a comfortable learning experience for students. It is also recommended that participants be provided with a wide range of activities that promote communication and interaction during the teaching and learning process, with a particular emphasis on group work and collaboration. Additionally, it is essential to devote time to the individual needs of each learner within the classroom setting to facilitate English language acquisition. In practical application, it is advisable for educators to integrate multiple authentic materials within the classroom setting to optimize learning outcomes. The present study recommends the adoption of an inductive instructional approach to language learning that comprises both grammatical knowledge and language skills.

6. CONCLUSION

When comparing the post-test scores to the pre-test scores, it was found that both deductive and inductive instructional approaches helped students improve their descriptive writing skills. When comparing the post-test results of the two experimental teams, it was seen that the team using the inductive educational method outperformed the team using the deductive approach. This indicates that the inductive instructional approach is a more effective technique. Hence, the outcomes of this research carry significant ramifications for teaching modifiers to proficient ESL learners. Although some teachers of grammar have used the deductive method, inductive methods are preferred. In addition, a learner-centered approach is recommended in the classroom since it increases students' motivation to learn. The results derived from the feedback form demonstrate that learners exhibit a greater preference for the inductive instructional approach over the deductive instructional method.

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