Research Paper

Impact of Inductive and Deductive Pragmatic Instruction on Iranian Intermediate EFL Learners' Grammar Awareness: A Study on Appropriateness and Accuracy

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Abstract
The present study aims to examine the efficacy of inductive and deductive instructional approaches in enhancing the accuracy and appropriateness of grammar among Iranian intermediate EFL learners. From an initial population of 120 students at Zabansara English Language Institute in Gilan, sixty participants were chosen based on their scores on the OPT English proficiency test. These participants were then divided into three groups: one group received inductive grammar instruction, another group received deductive instruction, and a control group followed traditional grammar teaching methods. Participants completed a pretest over a period of ten weeks to determine their initial level of grammatical awareness. They were then subjected to specific interventions for each target group. Posttests quantified improvements in grammatical proficiency, using statistical methods such as paired samples t-tests and one-way ANOVA to analyze the outcomes before and after the intervention. The results demonstrated notable enhancements in grammatical abilities for both experimental groups in comparison to the control group, implying that inductive and deductive teaching techniques are more efficacious than conventional approaches. Nevertheless, the results did not indicate statistically significant disparities between the groups who used inductive and deductive reasoning. This study emphasizes the possible advantages of applying novel teaching methods to improve the grammatical comprehension of EFL learners. It is advisable for EFL instructors imparting grammar lectures to incorporate both inductive and deductive teaching approaches in their English language training.
Keywords: Deductive pragmatic instruction; Inductive pragmatic instruction; Grammatical accuracy; Grammatical appropriateness

تأثیر آموزش کاربردشناسی استقرایی و قیاسی بر آگاهی دستوری زبان‌آموزان ایرانی در سطح متوسط: بررسی تناسب و دقت
این پژوهش به بررسی اثربخشی روش‌های آموزشی استقرایی و قیاسی در بهبود دقت و تناسب دستوری زبان‌آموزان ایرانی سطح متوسط می‌پردازد. از میان ۱۲۰ دانشجوی اولیه در مؤسسه زبان انگلیسی زبانسرا در گیلان، شصت شرکت‌کننده بر اساس نمرات خود در آزمون مهارت زبان انگلیسی OPT انتخاب شدند. این شرکت‌کنندگان به سه گروه تقسیم شدند: یک گروه آموزش دستوری استقرایی دریافت کرد، گروه دیگر آموزش قیاسی و گروه کنترل از روش‌های سنتی تدریس دستور زبان پیروی کرد. شرکت‌کنندگان در یک پیش‌آزمون که طی یک دوره ده هفته‌ای برگزار شد، سطح اولیه آگاهی دستوری خود را سنجیدند و سپس تحت مداخلات خاصی برای هر گروه هدف قرار گرفتند. پس‌آزمون‌ها به منظور ارزیابی بهبود در مهارت‌های دستوری انجام شد و از روش‌های آماری مانند آزمون تی جفت شده و آنالیز واریانس یک‌طرفه (ANOVA) برای تحلیل نتایج پیش و پس از مداخله استفاده شد. نتایج نشان داد که هر دو گروه تجربی نسبت به گروه کنترل بهبود چشمگیری در توانایی‌های دستوری خود داشتند و نشان دادند که تکنیک‌های تدریس استقرایی و قیاسی از روش‌های مرسوم مؤثرتر هستند. با این حال، نتایج تفاوت آماری قابل توجهی بین گروه‌هایی که از استدلال استقرایی و قیاسی استفاده کردند، نشان نداد. این پژوهش بر مزایای احتمالی استفاده از روش‌های نوین تدریس جهت بهبود درک دستوری زبان‌آموزان زبان خارجی تأکید دارد. توصیه می‌شود که مدرسان زبان انگلیسی که به تدریس دستور زبان می‌پردازند، از هر دو روش تدریس استقرایی و قیاسی در آموزش زبان انگلیسی بهره گیرند.
واژگان کلیدی: آموزش کاربردشناسی قیاسی، آموزش کاربردشناسی استقرایی، دقت دستوری، تناسب دستوری

Introduction

In EFL instruction, the acquisition of knowledge is essential for improving students' linguistic competence (Fithriani, 2022). The techniques employed to augment understanding of grammar can significantly impact the effectiveness of language acquisition. One prominent approach that has generated attention in scholarly discussions is the use of inductive and deductive techniques in the instruction of grammar (Badpa, 2024). Inductive education, known for its inherent exploratory quality, motivates learners to extract grammatical principles by being exposed to genuine language situations, therefore fostering more profound cognitive involvement (Benitez-Correa et al., 2019; López & Pérez, 2024). This methodology is based on constructivist learning theories that emphasize the need of learners actively building their knowledge. Moreover, cognitive theories support the idea that adopting a learner-centered approach to exploration promotes deeper cognitive involvement and enhanced retention of grammatical concepts, hence enhancing learners' ability to use language proficiently in social situations (Glaser, 2016; Tammenga-Helmantel et al., 2016).

Conversely, deductive instruction is distinguished by the clear and direct explanation of grammatical rules, which is then followed by chances for practical application and experience, therefore providing a more structured framework for learning. Behaviourist theories underpin this approach, emphasising the importance of repetition and reinforcement in language acquisition (Azkarai et al., 2022; Malla & Abbo, 2024). Critics of this teaching approach argue that it could lead to a shallow comprehension, where learners acquire the principles but struggle to apply them in authentic real-life communication situations (Musuña Masabanda & Yugcha Tipan, 2024). However, proponents contend that for individual learners, particularly those with strong analytical abilities, a methodical introduction to grammatical principles can improve understanding and facilitate the immediate use of these rules (Kuntso, 2024).

The empirical evidence presented by Adel et al. (2021) demonstrates that pragmatic education has a positive impact on the grammatical appropriateness and accuracy of language learners. Appropriateness relates to the acceptability of language in a specific situation, whereas accuracy refers to the correctness of language use (Alzu'bi, 2015; Pardayevna, 2021). Chen and Xia (2024) argue that successful pragmatic training should ideally improve the grammatical appropriateness and accuracy of language, therefore providing learners with the essential skills to traverse different interactional scenarios. The authors emphasized that a well-balanced combination of inductive and deductive approaches can promote a comprehensive comprehension of grammar, enabling learners to identify not just the basic principles but also the contextual subtleties essential for successful communication.

Research has demonstrated that this form of teaching can improve learners' comprehension and mastery of spoken and written language, leading to improvements in both grammatical correctness and precision (Rajabi & Farahian, 2013; Valijärvi & Tarsoly, 2015). Furthermore, the incorporation of technology in self-paced pragmatic instruction has been recognized as a valuable instrument in helping learners correct pragmatic mistakes and enhance their strategies to use language correctly, so leading to enhancements in both grammatical validity and precision (Civelek & Karatepe, 2021; Shirinbakhsh et al., 2016).

According to the studies conducted by Moghaddam et al. (2022) and Shahzad et al. (2020), the acquisition of English grammar poses a considerable obstacle for English as a Foreign Language (EFL) learners, especially in the Iranian setting, where the efficiency of pedagogical methods for teaching grammar can vary. Given the specific sociolinguistic difficulties that learners in the Iranian EFL environment often encounter, it is especially relevant to examine the effects of different teaching methods. Given the cultural and educational background of Iranian EFL learners, it is essential to adopt an approach that not only focuses on grammatical correctness but

also promotes pragmatic appropriateness. An investigation of the impact of inductive and deductive pragmatic teaching on grammar awareness yields useful knowledge for enhancing language education for intermediate learners (Khezrlou, 2019; Negahdaripour & Amirghassemi, 2016).

Scholarly research highlights the substantial influence of grammatical awareness on language competence, which affects both the comprehension and articulation of communication endeavors (Fatemipour & Hemmati, 2015; Pawlak, 2021; Pourmoradi & Vahdat, 2016). However, traditional ways of teaching grammar have mostly concentrated on deductive techniques, consisting of pragmatic training of rules prior to their implementation. Conversely, there is an increasing interest in inductive methods, which emphasize discovery learning by exposing students to authentic language usage, in the field of language education (Benitez-Correa et al., 2019; Pawlak, 2021).

Although inductive and deductive pragmatic education differ in their approaches, the effect of these two methods on grammatical awareness among Iranian EFL learners has not been well investigated. Prior studies have predominantly concentrated on teaching grammar in isolation, neglecting the possible correlation between pragmatic comprehension and grammatical competence. Consequently, it is imperative to examine the impact of different teaching methods on learners' grammatical knowledge and pragmatic ability, which are essential for successful communication.

This study aims to fill a significant gap in the existing literature by examining the distinct effects of inductive and deductive methods of pragmatic teaching on the grammatical awareness of Iranian English as a Foreign Language (EFL) learners. In order to inform more effective pedagogical methods within EFL contexts, the aim was to determine which of these instructional approaches may improve learners' comprehension and application of grammatical principles by asking the following questions.

RQ1: Does inductive pragmatic instruction affect Iranian intermediate EFL learners' awareness of appropriate and accurate grammar?

RQ2: Does deductive pragmatic instruction affect Iranian Intermediate EFL learners' awareness of appropriate and accurate grammar?

RQ3: Is there a distinction in the awareness of correct and appropriate grammar among Iranian Intermediate EFL learners that leads to differences in deductive, inductive, and conventional groups?

Literature review

The central focus of this inquiry is the idea of pragmatics, which emphasizes the importance of context in comprehending and using language. Pragmatics, as Kempson (2017) defines it, is the examination of how the interpretation of meaning is motivated by the surrounding environment. Pragmatic competence is essential in the field of EFL teaching since it includes both linguistic knowledge and the skill to utilize language proficiently in social situations. Pragmatic education, whether approached inductively or deductively, enhances this competency (Isaee & Barjesteh, 2024).

Underpinned by the constructivist theory of learning, inductive instruction focuses on the identification of norms and patterns by exposing students to language use in real-life situations. Mishra (2023) argues that this method is consistent with Krashen's Input Hypothesis, which suggests that language learning is greatly enhanced when learners are exposed to accessible and understandable input. Through active involvement with practical illustrations, students are prompted to deduce grammatical principles, which may result in more profound cognitive processing and increased knowledge of grammar (Saleem et al., 2021).

In contrast, deductive education adheres to a conventional pedagogical method in which rules and concepts are initially introduced, then followed by practical application. This approach is based on the cognitive theory of learning, which suggests that learners can successfully absorb and use linguistic structures more efficiently when given explicit explanations (Hwu et al., 2013; Varsat, 2023). Several studies (e.g., Karimi & Abdollahi, 2020; Nezakat-Alhossaini et al., 2014; Rezaei & Mehraein, 2019; Stratton, 2023) indicate that pragmatic training helps learners analyze and rectify their language production, hence promoting enhanced grammatical awareness. Furthermore, in the case of Iranian English as a Foreign Language (EFL) learners, this theoretical framework suggests that both inductive and deductive pragmatic education can greatly improve grammatical awareness, but through distinct cognitive strategies. The effectiveness of each approach may vary based on specific learner traits and contextual elements, requiring a detailed analysis of their effects.

Recent research has specifically emphasized the relative effectiveness of inductive and deductive approaches in promoting understanding of grammar. An investigation undertaken by Latifa (2023) examines the methodologies employed in the instruction of grammar to young students in three primary educational institutions. Research revealed that a majority of teachers, namely two-thirds, employ enjoyable activities as an implicit means of teaching grammar, since they believe it enhances the learning process for students. The second instructor employs uncomplicated activities. This paper proposes an inductive implicit grammar method to optimize language acquisition and highlights the need of ongoing progress monitoring to ensure learners meet learning goals punctually. This study emphasizes the difficulties encountered by English instructors when instructing fundamental grammar to young students.

The study conducted by Hashemi and Daneshfar (2018) involved the use of three different ways to grammar training, including the deductive technique, the inductive technique, and the implicit technique. The results of their study revealed different degrees of efficacy among various instructional groups, with the Inductive group exhibiting higher performance in comparison to the others.

To further emphasize this differentiation, Lafta (2019) and Noveria (2021) conducted a comparative analysis of the impacts of deductive and inductive methodologies in the instruction of grammar. The findings of both investigations validated the beneficial impacts of the inductive-deductive approach. Furthermore, the study conducted by Lafta (2019) revealed that the group that received grammar instruction through deductive reasoning had somewhat superior performance and greater pleasure in comparison to the group that received grammar instruction using inductive reasoning.

Furthermore, Kuntso's (2024) literature review examines communicative grammar in the context of foreign language acquisition, scrutinizing different instructional techniques and strategies. This study emphasizes the advantages of including grammar education into all activities in English as a Foreign Language (EFL) classes, the beneficial impact of context and pragmatics on language acquisition, and the need of teaching grammar within a specific context. Furthermore, it explores the drawbacks of conventional linear models, the significance of real-life interactions, and the cognitive motivating link between language formation and meaning in the teaching of communicative grammar.

According to research conducted by Negahdaripour and Amirghassemi (2016), deductive pragmatic training has the potential to improve the accuracy of grammar usage among EFL learners. Conversely, a study conducted by Chen and Xia (2023) suggests that explicit-inductive teaching practices may result in improved long-term retention of pragmatic knowledge. Furthermore, Takimoto (2008) discovered that both deductive and inductive methods had a

favorable influence on learners' pragmatic ability. Deductive training shown immediate advantages, but its impact may diminish over time.

An exemplary study conducted by Shirav and Nagai (2022) with 34 second-year Japanese students revealed that both inductive and deductive teaching approaches were effective in instructing the passive voice. Nevertheless, the group receiving inductive training demonstrated greater performance on recognition tests compared to their deductive counterparts, indicating that the manner of instruction greatly altered learning results. Therefore, this research together emphasizes the need of taking into account both deductive and inductive pragmatic teaching approaches in order to accommodate learners' preferences and enhance their understanding of grammar.

Methodology

Investigating pedagogical approaches within the EFL context is essential for enhancing educational outcomes. This study aims to quantitatively assess the impact of both inductive and deductive methods of pragmatic instruction on the grammatical awareness of Iranian EFL learners. Employing a quasi-experimental research design, the research provides a systematic method for the collection and analysis of data.

Participants

The study involved a total of 60 participants selected from among 120 Iranian EFL learners enrolled in educational institutions in Gilan, specifically Zabansara. These participants were categorized into three distinct groups: two experimental groups, each subjected to either inductive or deductive teaching methodologies, and a control group that received conventional grammar instruction. The selection of the participants was based on their performance on the OPT English language proficiency test, which was utilized to guarantee that all individuals possessed a comparable foundation in English grammar.

Materials

The textbook "Oxford Modern English Grammar" was employed in grammar classes. Written by Val Hamilton in 2011 and published by Emerald Group Publishing Limited, it serves as an authoritative guide providing a comprehensive review of English grammar. It systematically presents essential English topics and demonstrates the practical application of grammar to address usage concerns and improve writing clarity. The book includes various examples of grammatical structures, self-study exercises, and classroom materials covering word structure and formation.

Instruments

In 2020, the Colombian higher education system integrated the Oxford Placement Test (OPT) to assess the English language skills of its students. The test had two main sections: Language Use and Listening. For the Language Use section, there was a specific emphasis on interpreting meanings that go beyond the immediate sentence. In addition to covering traditional grammar, vocabulary, and listening questions, the Language Use section required students to understand implied meanings within a given context. This approach aimed to provide a comprehensive assessment of the participants' language abilities by testing their capacity to understand subtle meanings in English.

The impact of teaching methods on grammar awareness was evaluated using the Oxford Practice Grammar Intermediate Tests as a pretest and posttest. These tests focused on assessing the accuracy and appropriateness of grammar, offering valuable insights into the effectiveness of the teaching strategies used. The Oxford Practice Grammar Intermediate Test consists of 100

questions, with odd-numbered questions (N=50) used as the pretest and even-numbered questions (N=50) as the posttest. The structured tasks in the pretest and posttest were specifically designed to target grammar structures relevant to the curriculum, enabling a systematic evaluation of participants' grammar skills over time.

Furthermore, OPT and Oxford Practice Grammar Intermediate Tests are reliable and valid assessments endorsed by the University of Oxford and developed by Oxford University Press.

Data Collection Procedures
To achieve the study's objectives, a series of systematic procedures were employed to collect the necessary data. Initially, a cohort of 120 English learners participating in intermediate English courses at the Zabansara English Language Institute in Gilan was selected. Following this, the OPT English Language Proficiency Test was conducted to establish a standardized measure and to accurately determine the proficiency levels of the participants. From this initial group, 60 students were chosen based on their scores, which were within one standard deviation of the mean. These selected students were subsequently organized into three distinct groups: one group received inductive instruction, another group underwent deductive instruction, and a third group was assigned to traditional grammar instruction as a control.

The study was conducted within a controlled setting over 10 weeks. To begin, a pretest was given to establish the baseline levels of grammar awareness among the participants. Following this, the two groups underwent instruction specific to their assigned methodology. The inductive group participated in contexts where grammar rules were inferred through exposure to language use, whereas the deductive group received pragmatic instruction on grammar rules, followed by practice exercises. The intervention consisted of two distinct experimental groups. Each group received instruction based on one of the two pedagogical methods: inductive or deductive. The inductive group engaged with grammar rules through contextualized examples and guided discovery, promoting exploration and critical thinking. In contrast, the deductive group was presented with grammar rules followed by practice exercises that reinforced the learned concepts. Meanwhile, the control group conventionally received instruction, adhering to the institute's standard curriculum. At the end of the intervention period, a posttest was administered to measure any changes in accuracy and appropriateness.

The primary instruments for data collection included pretest and posttest designed to measure learners' grammar awareness before and after the instructional intervention. The tests focused on various grammatical components, emphasizing both appropriateness in context and accuracy in language use. The tests were formulated in line with established language assessment standards to ensure their validity and reliability.

Following is the detail about the instructional intervention and collecting the necessary data for the study.

Phase 1: Preliminary Assessment
Before initiating the intervention, a preliminary assessment as a pretest was carried out to gauge the participants' initial levels of grammar awareness. This assessment included a diagnostic test that evaluated both the appropriateness in terms of social context and communicative function, as well as accuracy, which focused on the correct application of grammatical structures.

Phase 2: Instructional Sessions
The instructional phase lasted for 10 weeks, featuring two sessions per week for each group. Each session was meticulously planned as follows:

Inductive Group: The initial phase introduced specific grammatical structures through authentic texts, including dialogues and narratives. Learners engaged in guided discovery activities designed to encourage the identification of patterns and the formulation of rules collaboratively. This was followed by group discussions to reflect on the relevance of these rules across various contexts.

Deductive Group: This phase involved direct instruction on grammatical rules, delivered with clear explanations and examples. Learners had the opportunity to immediately practice applying these rules through sentence construction and error correction tasks. Individual feedback sessions were also part of this phase, aimed at addressing common challenges and reinforcing the learning outcomes.

Phase 3: Post-Intervention Assessment
Following the ten-week instructional period, participants underwent a post-intervention assessment identical to the preliminary evaluation. This assessed the changes in their grammar awareness, specifically in terms of appropriateness and accuracy. Noteworthy, each question was given one score.

Data Analysis
The quantitative dimension of the present study necessitates the utilization of both descriptive and inferential statistical methods to effectively respond to the research inquiries. Initially, descriptive statistics were computed, including the mean, standard deviation, and standard error of the mean for each of the three participant groups involved in the study. Subsequently, to assess the research questions and analyze the data derived from the pretest and posttest scores, a paired samples t-test was conducted to compare the results of the pretest and posttest between the two experimental groups. Additionally, a one-way ANOVA was applied to explore the variations in mean scores among the three groups, which were categorized according to the independent variables across all posttest assessments.

Results
To find the answers to the research questions, the researchers first administered the OPT to ensure the participants had a similar English language proficiency level. Then, they assessed the test results according to the criteria specified in the OPT guidelines. Table 1 indicates the groups' performance in the proficiency assessment.

Table 1
Descriptive Statistics of the Participants' Scores on OPT

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
IEG	20	45.4500	9.37789	2.09696	41.0610	49.8390	30.00	59.00
DEG	20	44.3500	9.27518	2.07399	40.0091	48.6909	30.00	59.00
CG	20	46.9000	7.89337	1.76501	43.2058	50.5942	34.00	60.00
Total	60	45.5667	8.78629	1.13431	43.2969	47.8364	30.00	60.00

The data illustrated in Table 1 reveal that the scores for the three groups fall between 30 and 60. According to the Common European Framework of Reference (CEFR) proficiency levels, the

mean scores of these groups imply a proficiency level approximately at B1, signifying an intermediate level of English language proficiency.

Table 2

Tests of Normality on the OPT Scores

	Skewness		kurtosis		Kolmogorov- Smirnov[a]		
	Statistic	Std. Error	Statistic	Std. Error	Statistic	df	Sig.
Scores	-.069	.309	-1.134	.608	.073	60	.200

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The assessment of normality for the scores of the OPT groups is presented in Table 2. The findings reveal that both the skewness and kurtosis ratios are within the acceptable range of ±1, suggesting that the data adheres to a normal distribution. Additionally, the Kolmogorov-Smirnov test statistic surpasses the critical threshold of .05, further confirming that the scores conform to a normal distribution.

Table 3

Test of Homogeneity of Variances of OPT Scores

Levene Statistic	df1	df2	Sig.
.643	2	57	.530

The results of Levene's test for homogeneity of variances are presented in Table 3. The analysis indicates that there is no evidence of unequal variances based on the statistical values: $F(2, 57) = .643$, $p = .530$.

Table 4

Results of One-Way ANOVA for the OPT Scores

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	65.433	2	32.717	.415	.662
Within Groups	4489.300	57	78.760		
Total	4554.733	59			

The results derived from the one-way ANOVA analysis concerning the performance of the three groups in the OPT are detailed in Table 4. The calculated F-statistic of .415 indicates that the variance observed between the groups is not substantially greater than the variance found within the groups, thereby suggesting that the performance differences among the groups are negligible. Additionally, the p-value of .662, which is significantly above the conventional alpha level of 0.05, leads to the conclusion that the null hypothesis cannot be rejected. This finding implies that there is no statistically significant difference in the performance levels of the three groups in the OPT.

Table 5

Descriptive Statistics of the Participants' Pretest and Posttest Scores on Grammar Test

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum

					Lower Bound	Upper Bound		
Pretest	IEG	20 19.2000	6.74810	1.50892	16.0418	22.3582	12.00	35.00
	DEG	20 23.7000	7.94786	1.77719	19.9803	27.4197	12.00	40.00
	CG	20 22.4000	5.45218	1.21915	19.8483	24.9517	13.00	34.00
	Total	60 21.7667	6.94376	.89644	19.9729	23.5604	12.00	40.00
Posttest	IEG	20 40.0500	5.52006	1.23432	37.4665	42.6335	29.00	50.00
	DEG	20 44.1000	6.38172	1.42700	41.1133	47.0867	27.00	50.00
	CG	20 33.9000	8.72926	1.95192	29.8146	37.9854	21.00	48.00
	Total	60 39.3500	8.08393	1.04363	37.2617	41.4383	21.00	50.00

*IEG: Inductive Group
*DEG: Deductive Group
*CG: Control Group

The descriptive statistics in Table 5 show the pretest and posttest scores of the participants. Upon analyzing the data, a noticeable improvement in the performance of both groups is evident from the initial assessment to the final evaluation.

Table 6
Tests of Normality for the Groups' Pretest and Posttest Scores

		Skewness		Kurtosis		Kolmogorov-Smirnov[a]		
		Statistics	Std. Error	Statistics	Std. Error	Statistics	df	Sig.
Pretest	IEG	1.092	.512	.821	.992	.143	20	.200
	DEG	.684	.512	-.478	.992	.118	20	.200
	CG	.589	.512	.277	.992	.229	20	.007
Posttest	IEG	-.159	.512	-.692	.992	.256	20	.001
	DEG	-1.430	.512	1.367	.992	.206	20	.026
	CG	-.081	.512	-1.405	.992	.196	20	.043

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

The findings illustrated in Table 6 indicate that the skewness-to-kurtosis ratio is within the range of ± 1, suggesting that the dataset conforms to a normal distribution. Additionally, the outcomes of the Kolmogorov-Smirnov test surpass the significance threshold of .05, thereby reinforcing the hypothesis of normality in the score distributions.

In addressing the initial research question, paired samples t-tests were employed to assess the impact of inductive pragmatic instruction on the grammatical awareness of Iranian intermediate EFL learners, comparing pretest and posttest results within the first experimental group.

Table 7
Paired Samples T-tests on the Participants' Scores Receiving Inductive Pragmatic Instruction

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
IEG	Pretest	19.2000	20	6.74810	1.50892
	posttest	40.0500	20	5.52006	1.23432

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
IEG	pretest posttest	-20.85000	8.62844	1.92938	-24.88823	-16.81177	-10.807	19	.000

The data illustrated in Table 7 indicates a significant improvement in the grammatical appropriateness and accuracy among participants who received inductive pragmatic instruction, identified as the first experimental group. The average score demonstrated a substantial rise from the pretest (M = 19.2000, SD = 6.74810) to the posttest (M = 40.0500, SD = 5.52006), yielding a t-value of -10.807 and a p-value of .000.

In addressing the second research question, paired samples t-tests were employed to assess the impact of deductive pragmatic instruction on the awareness of appropriate and accurate grammar among Iranian intermediate EFL learners, comparing results from the pretest to the posttest within the second experimental group.

Table 8
Paired Samples T-tests on the Participants' Scores Receiving Deductive Pragmatic Instruction

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
DEG	Pretest	23.7000	20	7.94786	1.77719
	posttest	44.1000	20	6.38172	1.42700

Paired Samples Test									
Paired Differences									
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
DEG	pretest-posttest	-20.40000	11.47721	2.56638	-25.77150	-15.02850	-7.949	19	.000

The data illustrated in Table 7 indicates a significant improvement in the grammatical appropriateness and accuracy among participants who received inductive pragmatic instruction, identified as the first experimental group. The average score demonstrated a substantial increase from the pretest (M = 23.7000, SD = 7.94786) to the posttest (M = 44.1000, SD = 6.38172), yielding a t-value of -7.949 and a p-value of .000.

To assess the impact of traditional grammar instruction on the control group, a paired sample t-test was performed to compare the pretest and posttest scores.

Table 9

Paired samples T-tests on the Participants' Scores Receiving Conventional Instruction in the Control Group

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
CG	Pretest	22.4000	20	5.45218	1.21915
	posttest	25.5000	20	7.00751	1.56693

Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
CG pretest – posttest	-3.10000	7.85996	1.75754	-6.77857	.57857	-1.764	19	.094

The results in Table 9 indicate that the control group exhibited a minimal statistical increase in scores from the pretest (M = 22.4000, SD = 5.45218) to the posttest (M = 25.5000, SD = 7.00751), with a t-value of t (19) = -1.764 and a p-value of .094.

To address the third research question and assess any significant differences in the performance among the three groups, a one-way ANOVA was conducted. The inferential statistics about the pretest and posttest scores for the three groups are presented below.

Table 10

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
posttest	2.538	2	57	.088

The results shown in Table 10 demonstrate that Levene's test for homogeneity of variance upheld the assumption of equal variances, as indicated by the statistics F (2, 57) = 2.538 and p = .088.

Table 11

Results of One-Way ANOVA For the Three Groups' Posttest Scores

		Sum of Squares	df	Mean Square	F	Sig.
posttest	Between Groups	1055.100	2	527.550	10.737	.000
	Within Groups	2800.550	57	49.132		
	Total	3855.650	59			

Table 11 reveals a statistically significant difference in the means across the three groups, with a significance level of .000, which is well below the 0.05 threshold. This indicates that each of the three instructional methods played a role in improving the grammatical correctness and precision of Iranian intermediate EFL learners. Furthermore, to assess the relative effectiveness of each group, a series of multiple comparison analyses were performed.

Table 12
Scheffe Multiple Comparisons

	(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
posttest	IEG	DEG	-4.05000	2.21658	.073	-8.4886	.3886
		CG	6.15000*	2.21658	.007	1.7114	10.5886
	DEG	IEG	4.05000	2.21658	.073	-.3886	8.4886
		CG	10.20000*	2.21658	.000	5.7614	14.6386
	CG	IEG	-6.15000*	2.21658	.007	-10.5886	-1.7114
		DEG	-10.20000*	2.21658	.000	-14.6386	-5.7614

*. The mean difference is significant at the 0.05 level.

In Table 12, the outcomes of Scheffe multiple comparisons are displayed. As per the findings, there is no notable difference in the comparison between DEG and IEG (p = 0.073).

Comparing DEG with the control group reveals a significant contrast, as DEG exhibits a mean that is notably higher than that of CG (p < 0.001). In general, both experimental groups (IEG and DEG) demonstrate significantly higher mean scores than the control group (CG). Notably, DEG displays an even larger mean distinction than IEG. These findings indicate that the experimental treatments administered in IEG and DEG have a substantial impact on the measured outcome in comparison to the control condition.

Discussion and Conclusion

The aim of this study was to examine how inductive and deductive methods of pragmatic instruction impact the understanding of grammatical appropriateness and accuracy in Iranian intermediate English as a Foreign Language (EFL) learners. The results revealed that individuals in the experimental groups showed a significant improvement in their test scores from the period before the study to the period after the study, as compared to the control group. These findings indicate that both inductive and deductive grammar teaching had a substantial impact on the learners' comprehension of grammatical knowledge. Therefore, the research showed that there was no statistically significant disparity in performance between the inductive and deductive teaching approaches. Moreover, it was established that both approaches were superior to conventional grammar teaching methods in promoting enhancements in grammatical appropriateness and precision.

Therefore, the results of this study corroborated the findings of several studies conducted by Alzu'bi (2015), Badpa (2024), Benitez-Correa et al. (2019), López and Pérez (2024), and Malla and Abbo (2024) that emphasize the benefits of employing deductive pragmatic grammar instruction in improving students' comprehension of concepts, pragmatic grammar, and complex structures in English language classes. Moreover, the use of inductive training can facilitate students in uncovering grammatical principles by means of instances and patterns, thereby involving them in active learning and critical thinking. This approach fosters a more profound comprehension as learners instinctively infer rules, rendering the learning process more pleasurable and rewarding for students.

The results of the present study are consistent with the research conducted by Lafta (2019), which demonstrated that customizing language education to meet the needs of students through deductive and inductive methods can accommodate various learning styles and improve grammatical precision and suitability. The present study's results align with the research undertaken by Pourmoradi and Vahdat in 2016, which demonstrated that there was no

statistically significant disparity in grammar acquisition between individuals who employed inductive and deductive teaching approaches. Both approaches were determined to be more advantageous in comparison to conventional teaching. Several studies have shown that inductive grammar instruction is more efficacious in English as a Foreign Language (EFL) classes (Haight et al., 2007; Latifah, 2023; Shirav & Nagai, 2022; Tammenga-Helmantel et al., 2016). Conversely, other studies have established that deductive grammar instruction is superior to inductive instruction (Ellis, 2006; Nassaji & Fotos, 2011; Indriyani, 2021; Tsai, 2019).

The findings of this inquiry appear to contradict the research undertaken by Mahjoob (2015), which examined the efficacy of inductive grammar teaching in comparison to deductive grammar training for English as a Foreign Language trainees. The research conducted by Mahjoob revealed that, although there were some variations in the average performance of the two instructional groups, there was no statistically significant disparity in the results of inductive and deductive grammar teaching approaches. Moreover, the study conducted by Sik (2015) indicates that deductive grammar training may provide a little benefit compared to inductive approaches in terms of students' academic achievement. However, it is important to note that this advantage is not statistically significant.

Implications of the Study

EFL teachers teaching grammar lessons should make a deliberate effort to integrate both inductive and deductive teaching approaches in their lectures. Student engagement and motivation are enhanced by inductive techniques, as they involve active participation in the discovery and formulation of rules, therefore fostering a more dynamic learning process. By promoting students' observation and analysis of the usage of grammar in context, they can develop a more profound comprehension of the structure and function of the language. Critical thinking is promoted via inductive learning when students are compelled to scrutinize facts, identify patterns, and formulate conclusions from their observations. Furthermore, engaging with authentic language examples can improve students' proficiency in applying grammar in practical communication scenarios. Empirical evidence suggests that rules acquired by inductive reasoning are more likely to be kept over time since students actively contribute to their understanding rather than simply memorizing them. Furthermore, the teaching usually takes place in a contextualized structure, which facilitates students' understanding of the significance of grammar in their language usage.

By using deductive teaching approaches, teachers provide explicit guidelines from the beginning, therefore providing students with a strong foundation that can enhance understanding and acquisition of knowledge, particularly for intricate grammatical constructions. Employing deductions to determine rules for certain grammatical aspects might enhance time efficiency, therefore allowing instructors to address a greater amount of content within a reduced time period. Through deductive training, students are able to promptly apply the principles in controlled tasks, therefore facilitating their understanding of proper grammar usage. Certain learners may express a preference for the organized framework inherent in deductive learning, therefore rendering it advantageous for pupils who excel in following instructions. Upon acquiring knowledge of the principles, students can promptly incorporate grammar exercises into their reading, writing, speaking, and listening activities. The use of deductive instruction enables professors to promptly evaluate students' understanding of the rules by administering practice exercises immediately following the instruction.

Limitations of the Study

This research had particular constraints that need meticulous evaluation. Firstly, it fails to investigate possible gender differences and their effect on the results of learning grammar, as it is

well acknowledged that gender affects learning techniques and interactions with grammatical concepts. Furthermore, the study focuses exclusively on learners at the intermediate level, leaving unanswered inquiries about the appropriateness of its teaching methods for EFL learners at different difficulty levels, ranging from novices to advanced students. Furthermore, the study fails to take into account individual participant characteristics such as aptitude, motivation, and attention, which are extensively recognized to have a substantial impact on learning results and grammatical awareness. Consequently, this restricts the extent of the conclusions. Ultimately, the study overlooks the possible advantages of a multifaceted teaching approach, which is suggested by experts like Noveria (2021) to improve grammar acquisition, by using the inductive and deductive instructional methods independently in separate classes.

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