



# A Comparative Study of the Effect of Explicit, Implicit, and Discovery Learning Methods on EFL Learners' Comprehension of English Passive Voice

Sepideh Rafiei Sakhaei<sup>1</sup>, Biook Behnam<sup>2\*</sup>, Zohreh Seifoori<sup>3</sup>

<sup>1</sup>Ph.D. Candidate, Department of English Language, Tabriz Branch, Islamic Azad University, Tabriz, Iran, rafieisakhaei

sepideh@gmail.com

<sup>2\*</sup> Associate Professor, Department of English Language, Tabriz Branch, Islamic Azad University, Tabriz, Iran

behnam\_biook@yahoo.com

<sup>3</sup> Associate Professor, Department of English Language, Science and Research Branch, Islamic Azad University, Tehran, Iran

Zseifoori2005@yahoo.com

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## ABSTRACT

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Despite all efforts rationalized around the significance of grammar instruction, it remains a contentious issue in the fields of second and foreign language teaching. Grammar teaching requires the design of both implicit and explicit approaches. One of the main features of grammar is English passive voice, which is, for various reasons, a difficult subpart of grammar for Iranian EFL learners. This quasi-experimental study was intended to comparatively and empirically investigate the effects and probable differences of Traditional Explicit Instruction (TEI), Implicit Input Enhancement (IIE), and Guided Discovery Method (GDM) on comprehension of passive voice among Iranian EFL learners. To serve the purpose, 70 students from Payam-Nour University of Tabriz were selected and divided into three groups including TEI (N = 23), IIE (N = 25), and GDM (N = 22). The participants were exposed to three different treatments and the pre-test and post-test were used to extract information on the learners' comprehension. The results of one-way ANCOVA showed that all three teaching approaches had positive effects on the comprehension of passive voice. Meanwhile, the GDM could lead to a better and more efficient contribution compared to the two other instructional techniques. Finally, some pedagogical implications have been presented for EFL teachers, students, and syllabus designers.

**Keywords:** Form-Focused instruction, Grammatical accuracy, Guided exploratory approach, Input enhancement

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## 1. Introduction

A good command of grammar is considered a necessary condition for learners to communicate effectively and accurately in English language (Khalifeh et al., 2022; Mashudi et al., 2022). Despite all efforts rationalized around the significance of grammar instruction, it remains a contentious issue in the fields of second and foreign language teaching (Sik, 2014). Ellis (2002) assumes that considering grammar teaching in L2 pedagogy, two main questions should be addressed: “1) should we teach grammar at all? 2) If we should teach grammar, how should we teach it?” (p. 167).

Some believe that with a certain ‘natural order’ in acquisition, teaching grammar is not necessary (Fakazli, 2021; Higgs & Ciffort, 1982; Krashen, 1981, 1982; Terrell, 1981). Others argue that even though formal education does not affect the route of SLA, it does have effects on the rate of learning (Akhmarianti, 2021; Zhou, 1989). Most part of the arguments about how to help EFL learners achieve grammatical competence centers around the dichotomy of implicit versus explicit grammar or deductive versus inductive (Gabriel, 2009). Some researchers who have a traditional view of language instruction emphasize the need for explicit teaching of grammar. However, those who think that students can learn a language without overt grammar instruction may use the implicit method (Sik, 2014).

Considering the degree of explicitness or implicitness of grammar teaching approaches a continuum, at one end, lie implicit methods that avoid mentioning form, and at the other end are very explicit approaches (Cushing, 2021; Rodriguez, 2009). However, because of the insufficiency of the methods that favor either meaning or form, approaches that combined both of them arose in the 1990s (Nahavandi & Mukundan, 2013). The need for a new method that provides students with adequate opportunities to communicate authentically, as well as increasing the grammatical accuracy of their outputs, paved the way for practicing Long’s (1991) Focus on Form (FonF), as a balanced solution (Yu, 2013).

FonF keeps away from extremities and is a substitute for the two polarized notions, namely, Focus on Meaning (FonM) and Focus on FormS (Fs) (Hassanzadeh & Salehizadeh, 2020; Nourdad & Tim Aghayi, 2014). The provision of noticing opportunities as one function of FonF is important since noticing theories have a pivotal role in SLA teaching. Schmidt (1990, 1993), who put forth the ‘Noticing Hypothesis’, recommends that adult L2 learners cannot begin to acquire linguistic features until they become aware of them at the input through noticing.

‘Input enrichment’ is achieved through input manipulation in an attempt to highlight some input features. Input enrichment requires designing tasks so that the target structures are repeated and/or become noticeable in the presented input (Ellis, 2003). The general form of enhancing input is to modify its form to make

it visually appealing through techniques such as bolding, color coding, highlighting, underlining, and so on (Doughty & Williams, 1998; Izumi, 2000; Lightbown & Spada, 1990; Namaziandost et al., 2020; Sharwood Smith, 1991; Williams, 1999).

A review of educational psychology, foreign language instruction, and second language acquisition literature (Collins et al., 1999; DeKeyser, 2003; Dhiorbhain, 2021; Ellis, 1995; MacWhinney, 1997; Moeller & Ketsman, 2010) indicates that a combination of explicit inductive grammar instruction is a sensible practice, which leads to positive learning results (Caprario, 2013). Thus, a more effective and practical approach to grammar instruction that aligns with popular research-based language teaching approaches and theories, called ‘guided discovery’, is recently emerged (Alcaraz & Isabel, 2018; Darakhani & Rajabi, 2022; Olorode, 2016; Permatasari & Laksono, 2019; Pratiwi et al., 2021; Sulistiani & Agustini, 2022).

‘Conscious induction’ (Decoo, 1996) or ‘guided-participatory approach’ (Adair-Hauck et al., 2005) or ‘guided discovery method’, a modified version of ‘discovery learning approach’ (Bruner, 1961) came into light with the introduction of constructivism into mainstream educational practice (Ertmer & Newby, 2013; Sulistiani & Agustini, 2022). Unlike the traditional method of instruction, in this method, the students are not first provided with an explicit explanation of the rules, instead, initially some examples are presented as separate sentences or in text, then, they are directed to consciously explore the use of the rules and forms through a sequence of steps, these might be tasks, language awareness activities, pictures, key questions from the teacher, and so forth (Bjornsdottir, 2016). Moreover, the stage of clarification of the previously discovered rules differentiates the aforementioned method from purely implicit approaches.

Actually, grammar instruction has been attempted using a variety of techniques over the course of language teaching history, each having advantages and disadvantages (Ciftci & Ozcan, 2021; Schurz & Coumel, 2020). As a personal experience, researchers of the present study have always perceived a sense of boredom from EFL learners for grammar courses in the Iranian academic context. In this regard, the most important thing for language teachers to do is to select a teaching method that best suits the requirements and interests of the language learner (Himmatova, 2023). Accordingly, the primary question is mostly concerned with the amount of explicitness of teaching (Sik, 2014). Iranian students in grammar lessons are frequently taught using conventional teacher-centered methodologies in which the teacher is the one who transmits the information. While the implicit methods with a student-centered approach have been praised for their success in EFL/ESL classrooms throughout the world, Iranian teachers are cautious to implement these methods since it might be sometimes difficult for learners, who are used to traditional styles, to retrieve the rules from the context (Khalifeh et al., 2022).

Some researchers feel that discovery learning, specifically once it is guided, is beneficial, with the rationale that when we learn things on our own, they are assimilated better and more efficiently than when we are taught (Harmer, 2007). By utilizing a guided discovery approach that includes targeted support and instruction, students of all skill levels can engage in higher-order thinking processes (Zohar & Dori, 2003). This is achieved through the active collaboration between students and instructors, and by utilizing a balanced combination of explicit and implicit strategies at various stages of its implementation (Marin & Halpern, 2011). All these findings call for broader discussions as there are few experimental studies in this area.

Despite the abundance of empirical studies highlighting the story of implicit opposed to explicit instruction methods regarding grammar instruction, the validity of their application in L2 situations, however, is widely disputed based on the body of literature that already exists on these learning strategies. Consequentially, because of the unique characteristics of the Iranian EFL setting, and inspired by disputes and seemingly contradicting outcomes found in the literature (Namaziandost et al., 2020; Shimanskaya, 2018; Sulistiani & Agustini, 2022) the purpose of this study is to examine the impact of these seemingly opposing educational frameworks in comprehension of English passive voice among lower-intermediate Iranian EFL learners. This may allow researchers to apply appropriate procedures in teaching and using grammatical structures generally and passive voice structure in particular in EFL classes.

## **2. Literature Review**

### **2.1. PPP as an Example of Explicit Instruction**

Apart from its name, PPP is still considered a prevalent educational model; it is the abbreviation for Presentation, Practice, and Production, which is as follows in accordance with Byrne (1976, 1986) and Harmer (2007). Harmer (2007) claims that presentation is associated with linguistic features that are pre-selected and arranged for explicit instruction. The second phase of the PPP method is practice. As Shehadeh (2005) states, the goal of this step is to repeat and apply practically the new information that the learner has acquired in the presentation stage. Production is related to the occasions to use a feature. It is delivered over free production tasks that aim at simulating real-world usages (written or spoken) like discussion, role-playing, and email exchange (Harmer, 2007).

During the 1990s, PPP was presumed as an outdated approach and became substantially old-fashioned (Anderson, 2016). First of all, PPP was blamed for being a synthetically-sequenced, isolated approach that focuses on form; the proponents of this view claimed that PPP does not reflect how languages are acquired (Ellis, 1993; Lewis, 1993; Skehan, 1998; Willis, 1994). Likewise, some (Lewis, 1996; Scrivener, 1996) contended that PPP concentrates on

teaching at the expense of learning, making it discordant with learner-oriented approaches to instruction.

## **2.2. Textual Input Enhancement**

Some researchers (Shimanskaya, 2018; VanPatten & Benati, 2015; VanPatten & Williams, 2007) have stressed the importance of language input in the development of L2 competence. According to Ellis (1994, 2008), theories of SLA assign varying degrees of importance to the role that input plays in language learning but they all admit the necessity of language input. The idea of input enhancement is based on directing students' attention to the intended form, while, focusing on meaning (Sharwood Smith, 1993).

Contrary to traditional grammar instruction, in which the learner's output is manipulated to bring about modifications in their developing system, the goal of textual input enhancement is to change how students understand and process the input. Text enhancement involves highlighting specific input features that might otherwise be overlooked, using typographical manipulations (Nahavandi & Mukundan, 2013). Considering FonF literature, input that is typographically enhanced using a variety of enhancement tools like boldfacing, capitalization, color-coding, italicizing, underlining, and the use of diverse font types and sizes, captures further attention of the students (Doughty & Williams, 1998; Wong, 2005).

## **2.3. Guided Discovery Learning**

Guided discovery learning has drawn the attention of researchers in the field of language education since the middle of the 1990s (Ausubel et al., 1968; Decoo, 1996; Hermann, 1969; Lefrancois, 1997; Wittrock, 1966) and has remained the subject of recent studies (Clark et al., 2012; de Jong & Lazonder, 2014; Janssen et al., 2014; Kinniburgh, 2022; Kuklthau et al., 2007; Mayer, 2004; Sulistiani & Agustini, 2022) indicating its importance. Different opinions have been expressed about the Guided Discovery Method (GDM). Discovery learning, which is a subset of the inductive method of language acquisition, is also recognized as the constructivist instructional design (Ertmer & Newby, 2013; Kirschner et al., 2006; Spiro & DeSchryver, 2009; Kinniburgh, 2022). This type of learning is actually based on the idea that learners must make (construct) knowledge. Thus, constructivist models are essentially discovery-oriented (Lefrancois, 1997). Hermann (1969) and others (Ausubel et al., 1968; Lehrer, 1986) claimed that educational psychologists have reached an agreement that there is nothing known as pure discovery learning.

Directions provided throughout practice, or in the rule discovery phase of inductive learning, are called guided discovery (Wittrock, 1966). Guided inquiry is a blend of didactic instruction with more student-centered and task-based methods. Didactic means that the learning task is in the control of the schoolteacher who is a guide at every stage of the lesson (Nierenberg, 1998). Furthermore, guided discovery is mostly considered an encouraging model

appreciated by students; this approach gives students the opportunity to make imaginative and suitable decisions according to the purpose of exploration (Westwood, 2008).

Various studies have tried to investigate the effectiveness of implicit versus explicit grammar teaching on the linguistic accuracy of language learners in different contexts (DeKeyser, 2003; Erlam, 2003; Lee, 2007; Norris & Ortega, 2001). For example, DeKeyser (2003) evaluated investigations that focused on the explicit/implicit second language opposition, either in a classroom context or in a laboratory. Results were significantly supportive of explicit learning. Similarly, Erlam (2003) compared inductive instruction, through FonF without explicit grammar teaching, to deductive instruction, which entailed rule presentation and metalinguistic information; learners in the deductive group experienced consistent improvements in learning presented grammar forms, contrasting the ones in the inductive group.

In the Iranian context, some scholars (Bakhshandeh & Jafari, 2018; Darakhani & Rajabi, 2022; Gholami & Talebi, 2012; Hasanvand & Mohammadian, 2022; Yazdani & Sadeghi, 2022) examined the instructional methods that focused on the role of explicit, implicit and discovery learning methods on improving EFL learners' grammar knowledge. One that may be more relevant to this study is Bakhshandeh and Jafari (2018). They investigated the effects of explicit instruction and input enhancement on improving Iranian EFL learners' simple past and simple present passive voice knowledge. Results indicated the superiority of explicit instruction in improving passive voice explicit knowledge.

In addition, in a recent study, Hasanvand and Mohammadian (2022) attempted to determine the impact of the guided discovery approach on adult and teenage learners' syntactic structures knowledge development. The results of the study showed that both groups improved but adults significantly outperformed teenagers.

The aforementioned studies are significant as they paved the way for subsequent research contrasting guided discovery learning with implicit and explicit language instruction techniques. The current study, however, differs from earlier ones in that, it concentrated on teaching English passive voice as a demanding grammatical structure to Iranian lower-intermediate EFL learners utilizing a variety of teaching methodologies. The reason why the passive voice was examined in this study goes back to the literature indicating that the passive voice structure is under discussion in Persian grammar, and the field's academics are at odds over its presence in this language (Bateni, 2010; Dabirmoghadam, 2011; Hadian et al., 2013; Khayampoor, 2010). Consequently, where the first noun or pronoun must be processed as the patient in the English passive voice, EFL students would have trouble processing it effectively (Qin, 2008). Furthermore, this structure does not often appear in the input given to EFL students in a classroom setting, making it difficult to notice and learn.

Moreover, acquiring the precise form of verb tenses and converting these tenses into passive voice is considered drudgery for EFL learners (Nourdad & Tim Aghayi, 2014).

Meanwhile, few studies exist to date on modern approaches to EFL grammar instruction like input enhancement or guided discovery method opposed to traditional explicit instruction in Iran, and to the best of the authors' knowledge, the cumulative influence of these strategies on Iranian language learners' grammatical proficiency has not been the subject of any study. As a new scientific effort, therefore, the present study was intended to comparatively and empirically investigate the effects and probable differences of various instructional approaches on comprehension of the passive voice among Iranian EFL learners. In order to achieve the goal of this study, the following research questions were formulated:

1. Do the three instructional techniques of traditional explicit instruction, implicit input enhancement, and guided discovery method have any significant effect on Iranian EFL learners' comprehension of passive voice?

2. Is there a significant difference among the groups receiving traditional explicit instruction, implicit input enhancement, and guided discovery method on comprehension of English passive voice?

### **3. Method**

#### **3.1. Participants**

To accomplish the objectives of this study, three intact classes including both female and male students attending the General English Course, in the academic year 2021-2022, at Payam-Nour University of Iran, Tabriz branch, participated in this study. The main purpose of this course was to improve students' communicative competence along with a concern for the sub-skills of grammar and essential vocabulary. They were sharing the same language background; all of them had just studied English for 6 to 7 years in junior and senior high schools and they had almost no chance to use English for communicative purposes outside of school or university classes. The participants were adults in the age range of 19-28. They were bilingual EFL learners; native speakers of Azeri whose second language was Persian. Based on the results of the English proficiency test, they were identified as lower-intermediate EFL learners. Since it was virtually impossible to disrupt the university schedules, three classes were randomly divided into three experimental groups.

To establish the participants' homogeneity, Key English Test (KET) was administered to measure the general language proficiency of the original pool of participants before the start of the study. The standard deviation and mean of the participants' scores on the KET were used as the criteria for selecting the subjects of the study. The test was administered to at least 99 students; the ones

whose scores fell between one standard deviation above and below the mean were chosen, and the outliers were excluded from further analyses. Finally, 70 students were selected and they were randomly assigned to three groups of GDM (N = 22; 4 males and 18 females; mean of age= 24 years old), IIE (N = 25; 11 males and 14 females; mean of age= 27 years old) and TEI (N= 23; 7 males and 16 females; mean of age= 28 years old) respectively.

### **3.2. Instruments**

#### **3.2.1. KET**

The researchers employed KET to choose a virtually homogeneous sample. The KET exam is a basic level Cambridge English qualification that assesses all four English language skills. Due to practical constraints, the proficiency test's speaking component was not given.

#### **3.2.2. Pre-test and Post-test**

The effectiveness of the instructional treatments was evaluated by comparison of the students' pretest-posttest performance on various tasks. After choosing the participants, their prior knowledge of the passive voice was assessed via a validated teacher-made pretest, consisting of a variety of assessment tasks, utilized to offer a clear understanding of the learners' comprehension knowledge of target structure, that is, passive voice. The participants' comprehension of the English passive voice was tested with a recognition test including multiple choice and close test formats comprising 45 items altogether. Upon the completion of the treatment, a posttest was given to discern whether there was a divergence in the students' comprehension of the target structure among the three instructional groups after 12 weeks of experimental teaching. The format and degree of difficulty of the posttest were identical to those of the pretest. The items were revised, however, to prevent information contamination as a result of the practice effect from the pretest to the posttest. This means that the vocabulary and context were modified, but the structural elements remained the same. The tests were checked for content validity by three English teachers to ensure that they are appropriate. To eliminate the researcher's potential bias and confirm the objectivity of the results, the reliability of the pretest and posttests were checked through Cronbach's Alpha.

### **3.3. Procedure**

At the beginning of the study, (KET) was given to 99 male and female EFL learners enrolled in general English course to choose a virtually homogenous sample. Three intact classes were later randomly divided into three experimental groups. Then, the pretest constructed and validated for the purpose of this research was administered to all groups to ensure that their grammatical knowledge of the target structure did not differ statistically significantly from one another. After that, the treatment sessions were started.



The entire research process was conducted during a 16-session semester, each of which lasted approximately 90 minutes. Each training session started with normal instruction of the main textbook which was the same for all the experimental groups. This typical training lasted about 45 minutes. The second half of the class was for the treatment part in which the experimental groups were instructed. The first and last two sessions were devoted to the implementation of the relevant tests. Throughout the 12 treatment sessions, the intended grammatical structures were taught to experimental groups.

TEI was implemented according to the (PPP) model of teaching grammar. This three-steps instructional program was performed with the participation of the teacher and students. In the first phase, the TEI group received a grammar explanation of a formula that illustrated the form of the structure and was provided with some explicit information on why and how to use passive voice in context. Because lack of understanding of its purpose and proper application is the primary issue with passive construction. Then, in order to focus on the aimed structure, some examples of the rule were given to clarify the structure. Next, at the practice part of the model learners were faced with different kinds of drills and exercises such as gap fill, substitution, sentence transformations, reordering sentences, or matching a picture to a sentence. At this stage, learners were actively controlled so that the new structure of passive voice was totally practiced. In the final stage, learners had the opportunity to communicate and generate their ideas while discussing a topic.

In the IIE group, grammar was taught implicitly using input enhancement techniques. At this point, the exercises were designed to draw students' attention to the target grammar features by boldfacing, underlining, and using a slightly larger font. There was no direct explanation by the teacher.

GDM was first operationalized through a brief context-setting activity from which the teacher extracted the relevant example sentences. A short reading text of appropriate level with plenty of instances of the intended form served as the context-setting activity. The text was accompanied by some basic comprehension questions. Next, a grammar worksheet (adapted from Caprario, 2013) was distributed in order to help the students acquire the grammatical structure through guided exploration of the form and meaning. The handout containing a set of consciousness-raising activities was divided into three parts: part A focused on the form, part B on the communicative meaning of the grammatical feature, and part C consolidated the preceding parts into a formula and definition.

When students fully comprehended the text, the instructor shifted to a linguistic focus by writing the samples of passive voice, taken out of the previously studied reading text, on the board. After that, the students were required to write the sample sentences on the section provided in the worksheet. Next, students started completing section A. They were given a time limit, and they were aware that they would have the chance to review their peers'

responses later. They were reminded to stop after completing part A (STOP HERE point). Once the majority of students had resolved the task, they were asked to share their answers in a small group or with a partner. They had to debate the reasoning behind their decisions and work together to find solutions if they had different responses or were unsure of the answers. But if they continued to disagree, they did not have to come to a consensus. At this phase, the attention of the entire class was drawn and the answers to part A were elicited. This process was compatible with the Think Pair Share model of Caprario (2013) in which students initially came up with a solution on their own, then they shared and discussed their findings in a small group or with a partner, and at last the correct forms were checked in as an entire class. This model had the privilege of motivating factual communication among learners and allowing them to help each other in critical thinking and problem-solving along with form noticing and lexical choices via their conversations (Caprario, 2013).

Upon finishing part A, the class was prepared to go to part B and went through the process once more. Similarly, before moving on to the next part, students had to stop at the end of this part to ensure all persons understood and had responded correctly. When the correct answers to section B were determined, the students went on to part C. At the time that they were engaged in working out the responses to part C, it was necessary for the teacher to highlight the connection between form and meaning. At this stage, learners' knowledge of the target structure's form and meaning was heightened which could help them recognize it in the future. Finally, after finishing the treatment, all of the participants took the posttest which served to appraise their progress in comprehension of passive voice in the experimental groups.

## **4. Results and Discussion**

### **4.1. Results**

To conduct this study, a quasi-experimental design comprising a pretest, three distinct treatments for the experimental groups, and a posttest was adopted. When the random assignment of participants is neither feasible nor ethical in educational research, quasi-experimental research allows researchers to perform comparative studies in their natural setting (Campbell & Stanley, 1966; Cook & Campbell, 1979; Dornyei, 2007). To answer the research question, which regarded the effectiveness of three instructional techniques, participants' scores were submitted to ANCOVA with a p-value of .05. In addition, to address the second research question, post hoc analyses were run to explore the results in more depth. All analyses were conducted using SPSS 26.

In this section, the effectiveness of the three methods of TEI, IIE, and GDM in improving the comprehension knowledge of passive voice by Iranian EFL learners is investigated. The descriptive statistics of the results of this study for the pretest and the posttest are presented in Table 1.

**Table 1***Descriptive Statistics in Pretest and Posttest for the Three Groups*

	N	Min	Max	Mean	Std. Deviation	Variance
GDM_pretest	22	7.00	22.00	13.22	3.67	13.517
GDM_posttest	22	17.0	36.00	26.77	6.06	36.755
IIE_pretest	25	7.00	24.00	14.60	3.71	13.833
IIE_posttest	25	13.0	33.00	22.32	5.77	33.310
TEI_pretest	23	8.00	21.00	14.13	3.37	11.391
TEI_posttest	23	10.0	31.00	17.56	5.51	30.439

The results presented in Table 1 show that the mean of the scores in TEI, IIE, and GDM increased after the treatment. However, further statistical tests were needed to prove the improvement of passive voice comprehension in the posttest. The initial ANCOVA assumptions (that is, normality of residuals, homogeneity of variances, linearity, and homogeneity of regression slopes) were tested before doing the main analysis, and the findings were determined to be satisfactory (see Appendix). The results of one-way ANCOVA for comparing the pretest and the posttest scores of the GDM, IIE, and TEI groups in order to verify the efficiency of the TEI, IIE, and GDM in improving Iranian EFL learners' knowledge of passive voice are presented in Table 2.

**Table 2***The Results of One-way ANCOVA for GDM, IIE, and TEI Groups*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Observed Power <sup>b</sup>
Corrected Model	1694.12 <sup>a</sup>	3	564.70	24.828	.000	1.000
Intercept	359.95	1	359.95	15.826	.000	.975
Prec	739.81	1	739.81	32.527	.000	1.000
Groups	1125.72	2	562.86	24.747	.000	1.000
Error	1501.14	66	22.745			
Total	37561.00	70				
Corrected Total	3195.27	69				

\* Prec=Pretest-comprehension

By Table 2, it is clear that the p values related to the three groups are less than 0.05; hence, all three groups have significantly affected the participants' knowledge of passive voice at a 95% confidence level. The Tukey posthoc test was used to identify which group or groups performed best in the post-test (Table 3).

**Table 3***Tukey Posthoc Test Results for the Posttest*

(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	4.45273*	1.69062	.028	.4005	8.5050
	3.00	9.20751*	1.72469	.000	5.0736	13.3414
2.00	1.00	-4.45273*	1.69062	.028	-8.5050	-.4005
	3.00	4.75478*	1.67096	.016	.7497	8.7599
3.00	1.00	-9.20751*	1.72469	.000	-13.3414	-5.0736
	2.00	-4.75478*	1.67096	.016	-8.7599	-.7497

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

Tukey posthoc test in Table 3 shows that the performance of the participants in the GDM group significantly differs from TEI and IIE groups ( $p < 0.05$ ). Because of the fact that the means of the scores in GDM is higher than the means of the scores in TEI and IIE (Table 1), GDM is more effective than the other groups in improving the comprehension knowledge of the passive voice. Moreover, there are differences between the IIE and TEI groups (Table 3) and the means of the scores in the IIE group are higher than the TEI group (Table 1). This shows that the participants in the IIE group outperformed those in the TEI group.

## 4.2. Discussion

This study was intended to investigate the effectiveness and possible differences between the three instructional methods of TEI, GDM, and IIE in the comprehension of English passive voice among Iranian EFL learners. The results of data analysis, in which a one-way ANCOVA was conducted, showed that there were significant differences among the participants receiving various instructional methods in terms of comprehension of passive voice. The findings showed that while all three teaching approaches had positive effects on the comprehension of passive voice; the GDM was superior to the two other instructional techniques in terms of its efficiency in improving students' comprehension knowledge of passive voice.

The success of GDM instruction can be attributed to its unique nature. On one hand, traditional approaches to language teaching in the EFL context of Iran mainly focus on grammatical structures and entail students to have precision in linguistic points rather than communication and fluency. On the other hand, since students in the implicit group were never given the chance to be exposed to explicit explanations of the grammatical rules, they might have had trouble acquiring the right tenses and forms. Juxtaposing these two conflicting views, GDM instruction appears to successfully bridge the gap between the two poles. It seems to be the most appropriate and successful educational technique in Iran to deal with the mismatch between extremely explicit or implicit methods of language teaching by intending to cause both accuracy and fluency. The findings of this part of the present study were in line with those of (Alcaraz & Isabel, 2018; Alfieri et al., 2011; Darakhani & Rajabi, 2022; El-Kahlout, 2010; Erfanrad et al., 2020; Hasanvand & Mohammadian, 2022; Kalanzadeh et al., 2018; Olorode, 2016; Permatasari & Laksono, 2019; Pratiwi et al., 2021; Simamora et al., 2019; Yazdani & Sadeghi, 2022). In addition, the study provided similar results to those obtained by Bakhshandeh and Jafari (2018) by indicating that various instructional techniques may result in distinct outcomes.

The possible reason why textual enhancement can facilitate students' comprehension of the target feature deserves additional clarification, too. This can be explained according to the noticing hypothesis. Based on the noticing

hypothesis (Schmidt, 1994), seeing L2 highlights in the spoken or written input to which L2 students are exposed is regarded as an essential condition for turning an input into the intake, which is required for learning to occur. Although this result supports the hypothesis, it is in contradiction to a number of research that did not find such facilitative effects (Izumi, 2002; Jourdenais, 1998; Leow, 1997, 2001; Leow et al., 2003; Overstreet, 1998, 2002; Wong, 2003). Moreover, the findings about the positive effect of TEI on students' comprehension of passive voice support the arguments concerning the significance of metalinguistic awareness in language learning. This part of the findings was in accordance with studies such as (Andrews, 2007; Lynch, 2005; Nazari, 2013).

The fact that IIE outperformed TEI in improving the comprehension knowledge of the passive voice is compatible with the findings of Williams and Evans (1998) and also Lee's (2007) studies. The results in Williams and Evan's (1998) research showed that the group exposed to the input enrichment techniques displayed more accurate use of the passive than did the control group. Besides, Lee's (2007) study findings showed that the textual enhancement technique, while improving the learning of passive form, had negative effects on participants' reading comprehension. Moreover, according to Rashtchi and Etebari's (2018) research, both input enhancement and input flooding significantly affected passive voice grammar knowledge. The results of this research also support the FonF literature (De Santis, 2008; Doughty & Williams, 1998; Oveidi et al., 2022; Robinson, 2001; Skehan, 2003; Spada, 1997; Swain, 1985).

## **5. Conclusion and Implications**

The aim of this study was to compare the effect of different instructional approaches on the comprehension of English passive voice among Iranian EFL learners to see whether they had positive effects on enhancing learners' comprehension of passive voice and if so, which one was more efficient. Although the study was carried out with a number of limitations and delimitations in the research methodology, sample size, and data collection instruments employed, its findings offer a number of conclusions. All three methods employed, that is, TEI, IIE, and GDM were known as useful techniques for creating a valuable context for practicing comprehension of passive voice.

As with all studies, this research also had some implications which helped the researcher to eagerly conduct it. Primarily, teachers can decide on which technique could be more effective for the learners and suit their needs and preferences. Teachers will know that they are in control of the classroom to a very limited degree and what cares most is the selection of appropriate instructional techniques. The main point is that teachers can intentionally choose different teaching techniques to help learners boost their comprehension of passive voice. Syllabus designers and material developers can make use of the findings of this study to design proper syllabi for language users. They are invited to speculate on the teaching techniques that are designed for grammar

purposes. Different teaching techniques should be incorporated at the level of material development to guide language teachers and learners to an effective comprehension of passive voice in the language-learning context.

To conclude, in spite of the above limitations, the present study joins an expanding body of research that examines the impact of diverse teaching methods on grammar instruction. The findings, though tentative, might broaden the scope of research on grammar teaching and open up numerous lines of inquiry for future research.

## References

- Adair-Hauck, B., Donato, R., & Cumo Johanssen, P. (2005). Using a story-based approach to teach grammar. In J. L. Shrum & E. W. Glisan (Eds.), *Teacher's handbook: Contextualizing language instruction* (3rd ed.) (pp. 189-213). Heinle & Heinle.
- Alcaraz, C., & Isabel, M. (2018). Benefits of guided discovery grammar instruction in the EFL classroom. *Psychology*, *103*(1), 1-18. <https://core.ac.uk/download/235853475.pdf>.
- Alfieri, L., Brooks, P. J., Aldrich, N. J., & Tenenbaum, H. R. (2011). Does discovery-based instruction enhance learning? *Journal of Educational Psychology*, *103*(1), 1-13. <https://psycnet.apa.org/doi/10.1037/a0021017>.
- Akhmarianti, A. (2020). Consciousness raising-based grammar teaching: empowering learner's metalinguistic awareness in Second Language Acquisition. *Advances in Social Science, Education and Humanities Research, Proceedings of the Eighth International Conference on English Language and Teaching (ICOELT-8 2020)*, *579*, 242-248. Atlantis Press SARL. <https://www.atlantis-press.com/article/125960930.pdf>.
- Anderson, J. (2016). Why practice makes perfect sense: The past, present and potential future of the PPP paradigm in language teacher education. *English Language Teaching Education and Development (ELTED)*, *19*(1), 14-22. <http://www.elted.net/volume-19.html>
- Andrews, K. L. Z. (2007). The effects of implicit and explicit instruction on simple and complex grammatical structures for adult English language learners. *TESL-EJ*, *11*(2), 1-15.
- Ausubel, D. P., Novak, J. D., & Hanesian, H. (1968). Learning by discovery. In D. P. Ausubel, J. D. Novak & H. Hanesian (Eds.), *Educational psychology. A cognitive view* (2 ed., pp. 519-564). Reinhart & Winston.
- Bakhshandeh, S., & Jafari, K. (2018). The effects of input enhancement and explicit instruction on developing Iranian intermediate EFL learners' explicit knowledge of passive voice. *Asian-Pacific Journal of Second and*

*Foreign Language Education*, 3(1), 1-18. <https://doi.org/10.1186/s40862-018-0060-4>

Batani, M. (2010). *Description of Persian grammatical structure*. Amirkabir Publications.

Björnsdóttir, Á. (2016). *Focus on Form: Deductive versus inductive techniques in teaching English* (Doctoral dissertation). <http://hdl.handle.net/1946/25960>

Bruner, J. S. (1961). The Act of discovery. *Harvard Educational Review*, 31, 21-32.

Byrne, D. (1976). *Teaching oral English*. Longman.

Byrne, D. (1986). *Teaching oral English new edition*. Longman.

Campbell, D. T., & Stanley, J. C. (1966). *Experimental and quasi-experimental designs for research*. Rand McNally.

Caprario, M. (2013). *Guided discovery grammar instruction: A Review of the literature with original teaching materials* (Master's thesis). [https://digitalcollections.sit.edu/ipp\\_collection/689](https://digitalcollections.sit.edu/ipp_collection/689).

Ciftci, H., & Ozcan, M. (2021). A contrastive analysis of Traditional Grammar Translation Method and Communicative Language Teaching in teaching English grammar and vocabulary. *International Online Journal of Education and Teaching (IOJET)*, 8(2), 709-729. <https://eric.ed.gov/?id=EJ1294310>.

Clark, R. E., Kirschner, P. A., & Sweller, J. (2012). Putting students on the path to learning: The case for fully guided instruction. *American Educator*, 36(1), 5-11. <https://eric.ed.gov/?id=EJ971752>.

Collins, L., Halter, R., Lightbown, P., & Spada, N. (1999). Time and distribution of time in L2 instruction. *TESOL Quarterly*, 33(4), 655-80. <https://doi.org/10.2307/3587881>.

Cook, T., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Houghton Mifflin.

Cushing, I. (2021). Grammar in schools: politics, policies and pedagogies. *English in Education*, 54(2), 213-214. <https://doi.org/10.1080/04250494.2020.1720490>

Dabirmoghadam, M. (2011). Passive in Persian. *Linguistics Journal*, 3, 31-46.

Darakhani, L., & Rajabi, P. (2022). Guided discovery learning and personality traits: Focusing on speaking confidence. *Journal of Language and Translation*, 12(1), 223-233. <https://doi.org/10.30495/TTLT.2022.689103>.



- Decoo, W. (1996). The Induction-Deduction Opposition: Ambiguities and Complexities of the Didactic Reality. *IRAL International review of applied linguistics in language teaching*, 34 (2), 95-118. <https://doi.org/10.1515/iral.1996.34.2.95>
- de Jong, T., & Lazonder, A. W. (2014). The guided discovery learning principle in multimedia learning. In R. E. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning (2<sup>nd</sup> Ed)* (pp.371-390). Cambridge University Press.
- DeKeyser, R. (2003). Implicit and explicit learning. In C. J. Doughty & M. H. Long (Eds.), *The handbook of second language acquisition* (pp. 313–48). Blackwell.
- De Santis, P. (2008). Text enhancement and the acquisition of English verbal inflection “s” by L1 Haitian creole speakers. *Applied Language Learning*, 18, 27-49.
- Dhiorbhain, A. N. (2022). A sociocultural rationale for an explicit inductive approach to grammar teaching in L2 teacher education. *Teaching Education*, 1-16. <https://doi.org/10.1080/10476210.2022.2118703>.
- Dornyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.
- Doughty, C., & Williams, J. (1998). Pedagogical choices in focus on form. In C. Dought & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 197-261). Cambridge University Press.
- El-Kahlout, Y. A. (2010). *The effectiveness of using guided discovery on developing reading comprehension skills for the eleventh graders in Gaza Governorates* (master’s thesis). Al-Azhar University-Gaza. <https://mobt3ath.com>.
- Ellis, N. C. (1995). Consciousness in second language acquisition: A review of field studies and laboratory experiments. *Language Awareness*, 4(3), 123-46. <https://doi.org/10.1080/09658416.1995.9959876>.
- Ellis, R. (1993). Talking shop: Second language acquisition research: How does it help teachers? *ELT Journal* 47(1), 3-11. <https://doi.org/10.1093/elt/47.1.3>.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford University Press.
- Ellis, R. (2002). Grammar teaching – practice or consciousness-raising? In Jack C. Richards & Willy A. Renandya (Eds.), *Methodology in language teaching: An anthology of current practice* (pp. 167-177). Cambridge University Press.

- Ellis, R. (2003). *Task-based language learning and teaching*. Oxford University Press.
- Ellis, R. (Ed.). (2008). *The study of second language acquisition*. Oxford University Press.
- Erfanrad, S., Fazilatfar, M. A., & Maftoon, P. (2020). Systemic-theoretical instruction vs. discovery learning: The case of Iranian EFL learners' acquisition of grammar. *Journal of Modern Research in English Language Studies*, 7(1), 45-78. <https://doi.org/10.30479/jmrels.2019.11687.1461>.
- Erlam, R. (2003). The effects of deductive and inductive instruction on the acquisition of direct object pronouns in French as a second language. *The Modern Language Journal*, 87(2), 242-260. <https://doi.org/10.1111/1540-4781.00188>.
- Ertmer, P.A., & Newby, T.J. (2013). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, 26(2), 43-71. <https://doi.org/10.1002/piq.21143>.
- Fakazli, O. (2021). Current issues in grammar teaching. *The Criterion: An International Journal in English*, 12(3), 223-239. <https://www.the-criterion.com/V12/n3/LL01.pdf>.
- Gabriel, R. (2009). *The efficacy of explicit grammar instruction and its impact on L2 rule learning: A literature review*. <http://files.eric.ed.gov/fulltext/ED509345.pdf>.
- Gholami, J., & Talebi, Z. (2012). The effects of implicit and explicit feedback on EFL learners' grammatical accuracy: The case of regular past tense in English. *International Journal of Physical and Social Sciences*, 2(6), 39-62.
- Hadian, B., Tavangar-rizi, M. & Amouzade, M. (2013). A functional analysis of the passive structure in Persian. *International Journal of Linguistics*, 5(4), 22-37. <http://dx.doi.org/10.5296/ijl.v5i4.3681>.
- Harmer, J. (2007). *The practice of English language teaching*. Longman.
- Hasanvand, M., & Mohammadian, A. (2022). The effects of guided discovery learning on the development of Iranian teenage and adult EFL learners' syntactic structures. *Applied Research on English Language*, 11(2), 73-92. <https://doi.org/10.22108/are.2022.130652.1781>.
- Hassanzadeh, M., & Salehizadeh, M. J. (2019). Focus on form options in second language pronunciation instruction: The case of lexical stress. *TESOL Journal*, 11(2), 1-18. <https://doi.org/10.1002/tesj.486>.

- Hermann, G. (1969). Learning by discovery: A critical review of studies. *Journal of Experimental Education*, 38(1), 58-72. <https://doi.org/10.1080/00220973.1969.11011167>.
- Higgs, T., & Clifford, R. (1982). The push toward communication. In T. Higgs (Ed.), *Curriculum, competence and the foreign language teacher* (pp. 57-79). National Textbook Company.
- Himmatova, N. N. (2023). Psychological Aspects of Learning a Foreign Language. *Spanish Journal of Innovation and Integrity*, 13, 1-6. <http://eprints.umsida.ac.id/10954/>.
- Izumi, S. (2000). *Promoting noticing and SLA: An empirical study of the effects of output and input enhancement on ESL relativization* (Unpublished doctoral dissertation). Georgetown University.
- Izumi, S. (2002). Output, input enhancement, and the noticing hypothesis: An experimental study on ESL relativization. *SSLA*, 24, 541-577. <https://doi.org/10.1017/S0272263102004023>.
- Janssen, F. J., Westbroek, H. B., & van Driel, J. H. (2014). How to make guided discovery learning practical for student teachers. *Instructional Science*, 42(1), 67-90. <https://doi.org/10.1007/s11251-013-9296-z>.
- Jourdenais, R. (1998). *The effects of textual enhancement on the acquisition of the Spanish preterit and imperfect* (Unpublished doctoral dissertation). Georgetown University.
- Kalanzadeh, G. A., Jafarigohar, M., Ghonsooly, B., & Soleimani, H. (2018). Mixed Effects of Input Enhancement, Explicit Instruction, Corrective Feedback, and Pushed Output in an Input-Output Mapping Practice. *Journal of Research in Applied Linguistics*, 9(1), 57-82.
- Khalifeh, A., Bavali, M., & Rassaei, E. (2022). Evaluating the impact of a flipped, a traditional, and an online course on grammar knowledge development and content coverage: Flipped class's perception in focus. *Journal of Modern Research in English Language Studies*, 9(3), 101-129. <https://doi.org/10.30479/jmrels.2022.16282.1970>.
- Khayampoor, A. (2010). *Persian grammar*. Tabriz University Press.
- Kinniburgh, J. C. (2022). *Developing the higher-order thinking skills of middle-school Geography students using Geographic Information Systems (GIS): a study of direct instruction and guided discovery pedagogies and the impact of additional multimedia scaffolding and teacher modelling pedagogies and the impact of additional multimedia scaffolding and teacher modelling* (Doctoral dissertation). Macquarie University.

- Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, 41(2), 75-86. [https://doi.org/10.1207/s15326985ep4102\\_1](https://doi.org/10.1207/s15326985ep4102_1).
- Krashen, S. (1981). *Second language acquisition and second language learning*. Pergamon.
- Krashen, S. (1982). *Principles and practice in second language acquisition*. Pergamon.
- Kuklthau, C. C., Maniotes, L. K., & Caspari, A. K. (2007). *Guided inquiry: Learning in the 21<sup>st</sup> century*. Libraries Unlimited.
- Lee, S. K. (2007). Effects of textual enhancement and topic familiarity on Korean EFL students' reading comprehension and learning of passive form. *Language Learning Journal*, 57(1), 87-118. <https://doi.org/10.1111/j.1467-9922.2007.00400.x>.
- Lefrancois, G. R. (Ed.). (1997). *Psychology for teachers*. Wadsworth.
- Lehrer, R. (1986). Logo as a strategy for developing thinking? *Educational Psychologist*, 21(1-2), 121-137. <https://doi.org/10.1080/00461520.1986.9653027>.
- Leow, R. (1997). The effects of input enhancement and text length on adult L2 readers' comprehension and intake in second language acquisition. *Applied Language Learning*, 8, 151-182.
- Leow, R. (2001). Do learners notice enhanced forms while interacting with the L2? An online and offline study of the role of written input enhancement in L2 reading. *Hispania*, 84(3), 496-509. <https://doi.org/10.2307/3657810>.
- Leow, R., Egi, T., Nuevo, A., & Tsai, Y. (2003). The roles of textual enhancement and type of linguistic item in adult L2 learners' comprehension and intake. *Applied Language Learning*, 13(2), 1-16.
- Lewis, M. (1993). *The lexical approach: The state of ELT and a way forward*. Language Teaching Publications.
- Lewis, M. (1996). Implications of a lexical view of language. In J. Willis & D. Willis (Eds.), *Challenge and change in language teaching* (pp. 10-16). Macmillan Heinemann.
- Lightbown, P. M., & Spada, N. (1990). Focus-on-form and corrective feedback in communicative language teaching: Effects on second language learning. *Studies in Second Language Acquisition*, 12(4), 429-448. <https://doi.org/10.1017/S0272263100009517>

- Long, M. H. (1991). Focus on form: A design feature in language teaching methodology. In K. De Bot, R. B. Ginsberg & C. Kramersch (Eds.), *Foreign language research in cross-cultural perspective* (pp. 39-52). Benjamins.
- Lynch, L. M. (2005). *Grammar teaching: Implicit or explicit?* <http://ezinearticles.com/?Grammar-Teaching:-Implicit-or-Explicit?&id=89342>
- MacWhinney, B. (1997). Implicit and explicit processes: Commentary. *Studies in Second Language Acquisition*, 19(2), 27-81. <https://doi.org/10.1017/S0272263197002076>.
- Marin, L. M., & Halpern, D. F. (2011). Pedagogy for developing critical thinking in adolescents: Explicit instruction produces greatest gains. *Thinking Skills and Creativity*, 6(1), 1-13. <https://psycnet.apa.org/doi/10.1016/j.tsc.2010.08.002>.
- Mashudi, M., Nurmansyah, A., Saenko, N. R., Nurjain, A., & Sharifullina, S. R. (2022). The impact of English cultural awareness on Indonesian advanced EFL learners' grammar knowledge. *International Journal of Society, Culture & Language*, 10(1), 99-108. <http://dx.doi.org/10.22034/ijscsl.2021.246709>.
- Mayer, R. E. (2004). Should there be a three-strikes rule against pure discovery learning? The case for guided methods of instruction. *American Psychologist*, 59(1), 14-19. <http://dx.doi.org/10.1037/0003-066X.59.1.14>.
- Moeller, A. J., & Ketsman, O. (2010). Can we learn a language without rules? In M. Bloom & C. Gascoigne (Eds.), *2020 vision for 2010: Developing global competence* (pp. 91-108). Johnson Litho Graphics.
- Nahavandi, N., & Mukundan, J. (2013). The impact of textual input enhancement and explicit rule presentation on Iranian elementary EFL learners' intake of simple past tense. *English Language Teaching*, 6(1), 92-102. <http://dx.doi.org/10.5539/elt.v6n1p92>.
- Namaziandost, E., Rezvani, E., & Polemikou, A. (2020). The impacts of visual input enhancement, semantic input enhancement, and input flooding on L2 vocabulary among Iranian intermediate EFL learners. *Cogent Education*, 7(1), 1-14. <https://doi.org/10.1080/2331186X.2020.1726606>.
- Nazari, N. (2013). The effect of implicit and explicit grammar instruction on learners' achievements in receptive and productive modes. *Procedia-Social and Behavioral Sciences*, 70, 156-162. <https://doi.org/10.1016/j.sbspro.2013.01.051>.
- Nierenberg, D. W. (1998). The challenge of "teaching" large groups of learners: Strategies to increase active participation and learning. *The International*

*Journal of Psychiatry in Medicine*, 28(1), 115-122.  
<https://doi.org/10.2190/EF68-J848-LAH1-N8QL>.

- Norris, J. M., & Ortega, L. (2001). Does type of instruction make a difference? Substantive findings from a meta-analytic review. *Language Learning*, 51(1), 157-213. <https://doi.org/10.1111/j.1467-1770.2001.tb00017.x>.
- Nourdad, N., & Tim Aghayi, E. (2014). Focus on form in teaching passive voice of different tenses. *Procedia-Social and Behavioral Sciences*, 98, 1400-1408. <https://doi.org/10.1016/j.sbspro.2014.03.558>.
- Olorode, J. J. (2016). *Effect of guided discovery learning method on students' academic achievement in financial accounting in colleges of education in Ogun State* (Unpublished M.Ed. Doctoral dissertation). Tai Solarin University of Education.
- Oveidi, M., Sepehri, M., & Shafiee, S. (2022). Differential effects of input/output tasks on learning English collocations by Iranian EFL learners through the corpus-based instruction. *Journal of Modern Research in English Language Studies*, 9(4), 143-168. <https://doi.org/10.30479/jmrels.2022.17054.20>.
- Overstreet, M. (1998). Text enhancement and content familiarity: The focus of learner attention. *Spanish applied linguistics*, 2(2), 229-258.
- Overstreet, M. (2002). *The effects of textual enhancement on second language learner reading comprehension and form recognition* (Unpublished doctoral dissertation). University of Illinois.
- Permatasari, D., & Laksono, W. (2019). Exploring guided discovery learning: The effect on students' integrated ability and self-regulated in Chemistry. *Journal of Physics: Conference Series*, 1233, 1-11. <https://doi.org/10.1088/1742-6596/1233/1/012023>.
- Pratiwil, A. Y., Rusilowati, A., & Nugroho, S. E. (2021). The use of online learning science materials in guided discovery to enhance student independence. *Educational Management*, 1-11.
- Qin, J. (2008). The effect of processing instruction and dictogloss tasks on acquisition of the English passive voice. *Language Teaching Research*, 12(1), 61-82. <https://doi.org/10.1177/1362168807084494>.
- Rashtchi, M., & Etebari, F. (2018). Learning the English passive voice: A comparative study on input flooding and input enhancement techniques. *International Linguistics Research*, 1(1), 67-67. <https://doi.org/10.30560/ilr.v1n1p67>.
- Robinson, P. (2001). Individual differences, cognitive abilities, aptitude complexes and learning conditions in second language acquisition. *Second*

*Language Research*, 17(4), 368-392.  
<https://doi.org/10.1177/026765830101700405>

- Rodriguez, A. G. (2009). *Teaching grammar to adult English language learners: Focus on form*. Center for Applied Linguistics.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11, 129-158.  
<https://doi.org/10.1093/APPLIN%2F11.2.129>.
- Schmidt, R. (1993). Consciousness, learning and interlanguage pragmatics. In G. Kasper & S. Blum-Kulka (Eds.), *Interlanguage pragmatics* (pp. 21-42). Oxford University Press.
- Schmidt, R. (1994). Deconstructing consciousness in search of useful definitions for applied linguistics. *AILA Review*, 11, 11-26.
- Schurz, A., & Coumel, M. (2020). Grammar teaching in ELT: A cross-national comparison of teacher-reported practices. *Language Teaching Research*, 0(0), 1-26. <https://doi.org/10.1177/1362168820964137>.
- Scrivener, J. (1996). ARC: A descriptive model for classroom work on language. In J. Willis & D. Willis (Eds.), *Challenge and change in language teaching* (pp. 79-92). Macmillan Heinemann.
- Sharwood Smith, M. (1991). Speaking to many minds: On the relevance of different types of language information for the learner. *Second Language Research*, 7(2), 118-132. <https://doi.org/10.1177/026765839100700204>.
- Sharwood Smith, M. (1993). Input enhancement in instructed SLA: Theoretical bases. *Studies in Second Language Acquisition*, 15(2), 165-179. <https://doi.org/10.1017/S0272263100011943>.
- Shehadeh, A. (2005). Task-based language learning and teaching: Theories and applications. In C. Edwards & J. Willis (Eds.), *Teachers exploring tasks in English language teaching* (pp. 13-30). Palgrave.
- Shimanskaya, E. (2018). On the role of input in second language acquisition: The case of French strong pronouns. *Language Learning*, 68(3), 780-812. <https://doi.org/10.1111/lang.12298>.
- Sik, K. (2014). *Using inductive or deductive methods in teaching grammar to adult learners of English* (Doctoral dissertation). [http://earsiv.atauni.edu.tr/xmlui/bitstream/handle/123456789/1211/kübra\\_sık\\_tez.pdf?sequence=](http://earsiv.atauni.edu.tr/xmlui/bitstream/handle/123456789/1211/kübra_sık_tez.pdf?sequence=)
- Simamora, R. E., Saragih, S., & Hasratuddin, A. (2019). Improving students' Mathematical problem solving ability and self-efficacy through guided discovery learning in local culture context. *International Electronic Journal*

*of Mathematics Education*, 14(1), 61-72.  
<https://doi.org/10.12973/iejme/3966>.

Skehan, P. (1998). *A Cognitive approach to language learning*. Oxford University Press.

Skehan, P. (2003). Focus on form, tasks, and technology. *Computer Assisted Language Learning*, 16(5), 391-411.  
<https://doi.org/10.1076/call.16.5.391.29489>

Spada, N. (1997). Form-focussed instruction and second language acquisition: A review of classroom and laboratory research. *Language Teaching*, 30(2), 73-87. <https://doi.org/10.1017/S0261444800012799>.

Spiro, R. J., & DeSchryver, M. (2009). Constructivism: When it's the wrong idea and when it's the only idea. In S. E. Tobias & T. M. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 106–123). Routledge.

Sulistiani, N. E., & Agustini, R. (2022). Improvement of student's creative thinking skills by guided inquiry-based student worksheet in acid-base materials. *Jurnal Pendidikan Kimia (JPKim)*, 14(3), 139-148.  
<https://doi.org/10.24114/jpkim.v14i3.37396>.

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235-253). Newbury House.

Terrell, T. (1981). The natural approach in bilingual education. In California State Department of Education (Ed.), *Schooling and language minority students: A theoretical framework* (pp. 117-46). Evaluation, Dissemination, and Assessment Center.

VanPatten, B., & Benati, A. G. (2015). *Key terms in second language acquisition*. Bloomsbury Publishing.

VanPatten, B., & Williams, J. (2007). Input processing in adult second language acquisition. In B. VanPatten, & J. Williams (Eds.), *Theories in second language acquisition: An introduction* (pp. 115–135). Lawrence Erlbaum Associates Publishers, Inc.

Westwood, P. S. (2008). *What teachers need to know about teaching methods*. Aust Council for Ed Research.

Williams, J. (1999). Memory, attention and inductive learning. *Studies in Second Language Acquisition*, 21(1), 1-48.  
<https://doi.org/10.1017/S0272263199001011>.



- Williams, J., & Evans, J. (1998). What kind of focus and on which form? In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 139-155). Cambridge University Press.
- Willis, J. (1994). *A Framework for task-based learning*. Longman.
- Wittrock, M. (1966). The learning-by-discovery hypothesis. In L. Shulman & E. Keisler (Eds.), *Learning by discovery: A critical appraisal* (pp. 33-75). Rand McNally.
- Wong, W. (2003). Textual enhancement and simplified input: Effects on L2 comprehension and acquisition of non-meaningful grammatical form. *Applied Language Learning, 13*(2), 17-45.
- Wong, W. (2005). *Input enhancement: From theory and research to the classroom*. McGraw-Hill.
- Yazdani, H., & Sadeghi, M. (2022). A comparative study on the effects of digitally self-regulated and guided discovery learning instructions on EFL learners' vocabulary acquisition. *Applied Research on English Language, 11*(4), 25-46. <https://doi.org/10.22108/are.2022.130942.1792>.
- Yu, M. (2013). *Teaching grammar using focus on form approach in communicative language teaching for Korean middle school students* (Master's thesis). University of Wisconsin. <https://core.ac.uk/download/pdf/10597911.pdf>.
- Zhou, Y. P. (1989). The Effect of explicit instruction on the acquisition of English grammatical structures by Chinese learners. *CUHK Papers in Linguistics, 1*, 70-104.
- Zohar, A., & Dori, Y. J. (2003). Higher order thinking skills and low-achieving students: Are they mutually exclusive? *The Journal of the Learning Sciences, 12*(2), 145-181. [http://dx.doi.org/10.1207/S15327809JLS1202\\_1](http://dx.doi.org/10.1207/S15327809JLS1202_1)

**Appendix****Results Related to Assumption Testing****Table A1***Klomogorov-Smirnov Test for the Normality of Data in the Pretest and the Posttest*

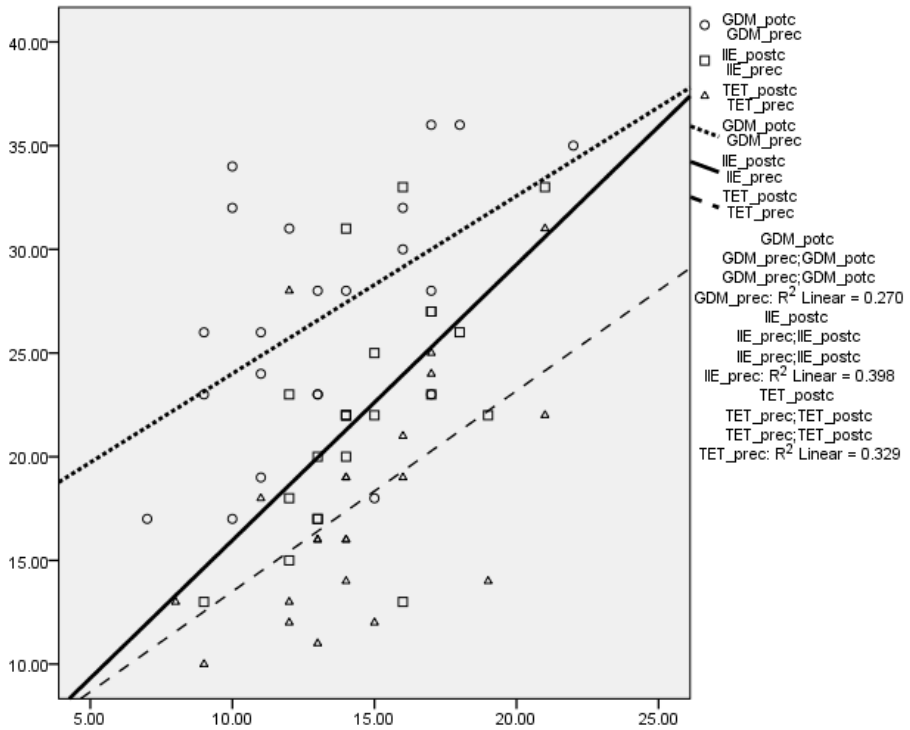
	Statistic	df	Sig.
GDM_pretest	.137	22	.200*
GDM_posttest	.097	22	.200*
IIE_pretest	.158	22	.163
IIE_posttest	.134	22	.200*
TEI_pretest	.174	22	.080
TEI_posttest	.163	22	.132

**Table A2***Levene's Test for Homogeneity of Variances in the Pretest and Posttest*

	Levene Statistic	df1	df2	Sig.
pre	.258	2	67	.774
post	.275	2	67	.760

**Figure A1**

*The Line Graph Displaying the Linear Relationship Between the Pretest and Posttest Comprehension Scores in Three Groups*



\* prec=pretest-comprehension, postc=posttest-comprehension