

Beyond Processing Instruction: Unpacking Student Performance and Voices in a Mixed-Methods Study of Causative Grammar Learning in EFL Contexts**Abstract****Article Type:****Original Research****Authors:****Ehsan Hosseinzadeh¹**ORCID: [0000-0001-5423-4943](#)**Masood Siyyari²**ORCID: [0000-0002-6273-2739](#)**Parviz Maftoon³**ORCID: [0000-0002-5585-3647](#)**Article History:****Received:** 2025.11.16**Accepted:** 2026.02.20**Published:** 2026.03.10

This study bridges cognitive theory and learners' perspectives to investigate the effectiveness of Processing Instruction (PI) in teaching causative constructions within EFL grammar contexts. A mixed-methods design was employed to capture both quantitative results and qualitative insights. The participants consisted of 123 undergraduate EFL students, assigned to two groups: one receiving PI and the other taught with a conventional method. The statistical results from the quantitative phase revealed that the PI group showed significant improvements in comprehension and retention of causative constructions compared to the conventional group. In the qualitative phase, semi-structured interviews were conducted with 12 students from the PI group to examine the efficacy of this instruction through the learner's lens. They reported that PI improved cognitive engagement and sustained interest, which contributed to their grammatical awareness and, as they perceived, their productive language use. The findings demonstrate that PI may effectively support grammar teaching, with practical implications for EFL learners, teachers, and syllabus designers.

Key Words: Causative Constructions; Cognitive Processing; Input Processing (IP); Learner Perceptions; Processing Instruction (PI); Recognition

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1. Introduction

Grammatical structures are widely regarded as a fundamental component in the process of foreign or second language acquisition due to their role in equipping learners with the skills to convey accurate meaning from the source language to the target language. Within this framework, causative constructions are generally deemed as linguistic forms that encode dependencies between causes and effects; that is, complex situations involving a causing event and a resulting caused event in discourse (Comrie, 1989; Song, 2013). These include periphrastic causatives, which encompass separate words rather than verb endings to indicate causation; the action by the causer and the resulting change occur in different parts of the sentence (Song, 1996). Verbs such as 'have' and 'make' stand out for showing that one person or thing (the causer) initiates an action or state that influences someone or something else. For example, in "the teacher made the student do homework," the verb "make" indicates that the teacher caused the learner to perform the action. Despite the key role they play, causative constructions are challenging for learners, as their interpretation hinges upon understanding how specific structural patterns express causal meaning at the interface between syntax and semantics (Benati & Batziou, 2019; Kang & Hou, 2013; Lee & Benati, 2007). These distinctions can be even more demanding for EFL learners, who typically rely on default processing strategies such as the First Noun Principle (VanPatten, 2004). This challenge is further exacerbated in EFL contexts due to the scarcity of authentic input (Gilmore, 2007).

Causative constructions can emerge in both active and passive voices, which add an extra layer of complexity for L2 learners. As Mathieson (2017) explained, active clauses in English are typically used when the agent or "doer" of the action is the primary focus (e.g., the teacher made...), whereas passive constructions instead give prominence to the affected participant or the process itself and are typically agentless (e.g., the tree was cut). To understand these shifts in agency and focus, learners need to be cognizant of how meaning is encoded through grammatical form. This creates additional cognitive challenges, as learners must discern not only who is doing the action but also how syntactic structure affects meaning (Benati & Angelovska, 2015; VanPatten, 2004). As noted by VanPatten (2004), learners commonly rely on default processing strategies that hinder accurate form-meaning connections. Compared to native speakers, L2 learners are less capable of processing and storing the same volume of information, which is due to their limited working memory capacity (VanPatten & Smith, 2022), and they tend to prioritize meaning over form during input processing, a tendency formalized as the Primacy of Meaning Principle (VanPatten, 2007; Benati, 2022). As a result, pedagogical approaches that

facilitate the processing of grammatical structures are necessary for effective language instruction (Zhong & Benati, 2024).

To address these challenges, VanPatten's Processing Instruction (PI) framework, first introduced in VanPatten (1993) and VanPatten and Cadierno (1993), aims to direct learners' attention to how grammatical forms map onto meaning during input processing. This aligns with Corder's (1967) foundational distinction between input and intake, where intake is the internalized portion of the available input. VanPatten, et al. (2019) defined intake as "that subset of the input for which a learner can connect form and meaning during real-time comprehension" (p. 101). Building on this input-oriented view of acquisition, PI emphasizes structured input activities to reduce processing complexity and enhance both comprehension and form-meaning mapping (Liang & Zhang, 2024).

VanPatten (2020) further reminded us that "although comprehension cannot guarantee acquisition, acquisition cannot happen if comprehension does not occur" (p. 113), reinforcing the need for input-focused instructional approaches. By comparing causative constructions, such as 'John had the tree cut' versus 'John cut the tree himself', learners can more effectively comprehend how structural changes affect meaning and focus. Moreover, research has demonstrated that PI significantly improves learners' comprehension and use of causative structures, which would lead to them internalizing form-meaning links that are often difficult for L2 learners (Benati & Batziou, 2019; Zhong & Benati, 2024).

Unlike traditional explicit instruction, PI employs structured input activities that help learners notice and internalize essential linguistic features (VanPatten, 2007). Within this framework, researchers such as Wong and Ito (2018) have shown that PI is effective for complex grammar points, further supporting its relevance for causative constructions.

Against this theoretical and empirical background, research on PI and structured input has provided substantial evidence for their effectiveness in preparing the ground for learners to make form–meaning connections across a variety of grammatical structures and languages (Benati, 2019; VanPatten, 2004). Nevertheless, this work has largely centered on accuracy-based outcomes in interpretation and production tasks, where comparatively fewer studies have examined learners' own evaluations of PI, expressly for structurally complex or cognitively demanding grammar (Benati & Batziou, 2019; Fahim & Ghanbar, 2014; Modirkhamene, et al., 2018). In response to these tendencies, the present study focused upon learners' performance on PI activities targeting English causative constructions and, above all, on their perceptions and experiences of PI, as represented in their own voices. Addressing these gaps, the following

research questions were addressed:

RQ1. Does learners' recognition of active and passive causative constructions improve through Processing Instruction (PI)?

RQ2. What are learners' attitudes toward the effectiveness of PI?

2. Method

2.1. Design

The current study utilized an explanatory sequential mixed-methods design, integrating quantitative and qualitative phases to present a holistic view of the effectiveness of PI in teaching causative structures. In the first quantitative phase, the experiment was conducted to evaluate the effect of PI on grammatical comprehension and retention among L2 learners. This phase embodied the administration of pretests, posttests, and delayed tests to measure changes in performance over time. The carefully controlled design of the current phase ensured that any observed improvements in the learners' recognition of causative structures could be attributed to the intervention.

After the quantitative phase, the study proceeded to the qualitative phase to investigate L2 learners' perceptions of PI. This phase aimed to gain a deeper understanding of L2 learners' experiences and perceptions, which were not typically feasible to access through numerical data. The researchers administered semi-structured interviews to learn about participants' perspectives on the teaching process, its challenges, strengths, and perceived effects on their learning.

2.2. Participants and Context

To conduct the current research, 156 undergraduate students were recruited, all of whom were majoring in TEFL or Translation and were enrolled in advanced grammar courses during the second year of their BA program. Nevertheless, the final sample comprised 123 participants (19 male, 104 female). This reduction was due to typical classroom attrition factors such as absenteeism, incomplete participation, and withdrawal, as well as the post hoc exclusion of a few learners who demonstrated prior mastery of causatives in the pretest. Age-wise, the participants ranged from 18 to 26 years, with 52 younger than 20 and 71 aged 20 or above. Their overall proficiency was intermediate level (lower to upper) based on the CEFR scale.

On account of institutional constraints that made random assignment infeasible, we adopted convenience sampling in which four intact classes were selected: three classes formed

the experimental group (combined $n = 93$) and one served as the control group ($n = 30$). To ensure consistency in content delivery, all participating classes were taught by the same instructor. Learners were also briefed, assured of confidentiality, and asked to provide informed consent.

2.3. Instruments

2.3.1. Oxford Quick Placement Test

The second version of the Oxford Quick Placement Test (OQPT), developed in collaboration with the University of Cambridge Local Examinations Syndicate (2001), was administered to gain an overall picture of the participants' English language proficiency. The test assesses grammar, vocabulary, and reading comprehension, and is widely used for placement purposes in English language programs. The OQPT reports proficiency levels according to the Common European Framework of Reference for Languages (CEFR), from pre-A1 to C2. Learners were required to answer 60 multiple-choice questions within 40 minutes.

2.3.2. Pre-, Post-, and Delayed Posttest

The pre-test, post-test, and delayed post-test were researcher-made instruments designed to measure learners' recognition and retention of active and passive causative constructions. This section details the process of their development, the pilot study conducted to ensure their quality, and the measures taken to establish their validity and reliability.

2.3.2.1. Test Development and Structure

The tests were developed by the researchers based on the instructional content and the specific grammatical structures targeted in the study (i.e., active and passive causatives). Each test version consisted of forty two items and was divided equally into three sections: listening, pictorial, and translation (fourteen items each). Listening Section aimed to assess aural comprehension. Learners heard fourteen English prompts (e.g., "Jack had two houses built last year,") and were asked to select the correct Persian translation from two alternatives. The distractors were carefully designed to isolate the recognition of the causative. Option A represented an interpretation where the subject performed the action themselves, while Option B correctly represented the causative meaning where the subject caused the action to be performed by someone else. In the pictorial section, participants were presented with fourteen visual prompts, each accompanied by two pictures. In this section, learners were asked to select one of the two pictures that most accurately represented the causative statement given. For the current study, twenty eight pictures, specifically designed for this research, were used. As an example, a representative prompt in this

part is:

John got his room cleaned last night.



Finally, the third section required participants to read sentences having causatives in English and select the most appropriate Persian translation for each. An illustrative example from this section is as follows:

I got my room painted last week.

- a. اتاقم را هفته پیش رنگ کردم
- b. هفته پیش دادم اتاقم را رنگ کردند
- c. اتاق را هفته پیش رنگ کردیم

2.3.2.2. Pilot Study and Item Analysis

To ensure its clarity and effectiveness, the test was piloted prior to the main study with a group of 30 learners from the same target population who did not participate in the actual experiment. The pilot data were used to conduct item analysis, evaluating each item based on two key indices: item difficulty and item discrimination. Concerning item difficulty, items with a p-value between 0.30 and 0.70 were retained as acceptably difficult. Items falling outside this range were identified for revision or replacement. Regarding item discrimination, items with a discrimination index of 0.30 or higher were retained for their strong discriminating power. Items with lower indices were scrutinized and either revised or discarded.

2.3.2.3. Test Validation

The test content was directly related to the instructional objectives and the specific grammatical structures (i.e., active and passive causatives) taught during the treatment period. Also, in terms of face validity, the test format, instructions, and layout were reviewed for clarity and appropriateness by three EFL instructors with experience in teaching grammar. Their

feedback was incorporated to make the test clear and accessible for the target proficiency level. Further, regarding construct validity, the test was designed based on the theoretical definition of causative constructions as outlined in the literature (Comrie, 1989; Song, 2013).

The distinction between the two options in the listening section, for instance, directly tapped into the learner's mental representation of the "causative" construct. Furthermore, the pilot study's item analysis, particularly the discrimination index, provided empirical evidence for construct validity, as items should function differently for learners with higher and lower levels of the underlying ability."

2.3.2.4. Test Reliability

The reliability of the instruments employed in this study was computed through multiple procedures. In fact, the test battery, prior to administration, was piloted with a comparable learner group to identify ambiguous items and strengthen clarity, and a detailed scoring rubric was developed for the constructed-response sections to minimize scorer subjectivity. After data collection, internal consistency reliability was calculated through Cronbach's Alpha. It revealed acceptable coefficients for the overall test ($\alpha = .79$) and for each sub-section: Listening ($\alpha = .70$), Pictorial ($\alpha = .73$), and Translation ($\alpha = .77$). Furthermore, inter-rater reliability was assessed on a randomly selected 25% of the protocols, with Cohen's Kappa indicating high agreement between raters for both the pictorial ($\kappa = .85$) and translation sections ($\kappa = .88$). These values indicated that the instrument produced consistent and dependable measurements across administrations.

2.3.3. Course book

The participants in the control group received instruction based upon the 5th edition of the course book *Understanding and Using English Grammar* (Azar & Hagen, 2017), a developmental skills text designed for intermediate to advanced learners. The book combines explicit grammar presentation with sequenced practice in order to boost learners' grammatical accuracy and their reading, writing, listening, and speaking skills. The instructor, in line with the regular syllabus, made use of the unit on causative verbs (get, have) to provide chart-based explanations, controlled written exercises, and contextualized tasks drawn from the book and its accompanying materials.

2.3.4. Semi-structured Interviews

To gain a broader perspective on learner attitudes regarding the effectiveness of PI, the

researchers conducted semi-structured interviews after the treatment phase. In addition to its flexibility, this instrument paved the way for learners to elaborate on their experiences with PI, which yielded richer and more individualized data. To this end, the researcher selected 12 EFL learners through purposeful sampling to ensure representation of participants with varying levels of performance, gender, and age.

Each interview lasted approximately 10-15 minutes and was conducted in English, with Persian utilized occasionally for clarification. To ensure accuracy in transcription and analysis, all interviews were audio-recorded with participants' consent. In advance of the interviews, ethical protocols were observed with the aim of ensuring that participants were informed of the study's purpose and assured of confidentiality and voluntary participation.

The two questions, prior to the interviews, were reviewed and validated by three experienced EFL instructors, two university professors specializing in applied linguistics, and two native speakers of English. This panel evaluated the questions for content relevance, linguistic clarity, and alignment with the study's objectives. Minor revisions were made based upon their feedback to simplify wording and make certain that the items elicited not only cognitive but also affective reflections on learners' experiences with PI.

The following two prompts were then asked:

1. *How effective do you think the PI technique was in teaching causatives?*

This question aimed to help the researcher gain a general understanding of learners' impressions regarding the extent to which PI contributed to their improvement in acquiring causatives in comparison with the traditional methods they had already experienced.

2. *How did you feel about the PI class overall and what were some advantages and disadvantages you noticed?*

This question prepared the ground for learners to freely express their opinions about their experiences with PI. Their responses painted a more detailed picture of the aspects that facilitated or hindered their processing. For instance, learners commented on aspects such as the interactive nature of tasks, how engaging they were, and the challenges they encountered while experiencing this instructional approach.

By means of semi-structured interviews, the researcher could gain open-ended responses through which learners shared specific observations and anecdotes, mostly accompanied by their expressions of motivation, frustration, or cognitive engagement.

2.4. Procedure

Commencing with the completion of a consent form and followed by the intervention, the data collection process concluded with interviews on learner attitudes. In session one, after the consent forms were collected, OQPT was administered to construct a broader profile of participants' English proficiency levels and enable the researcher to monitor potential confounding variables.

In session two, to minimize threats to internal validity and compare participants' knowledge of the target structures before and after the treatment, and determine whether learners had already been exposed to, or possessed prior knowledge of, the target forms (as indicated by a score above 60%), Version A of the researcher-developed test was administered as a pretest. This test was designed based on the structured input (SI) activities that learners would later complete during the experimental treatment. Prior to the pretest, participants were briefed in their L1 on how to respond to the questions, and were also encouraged to ask any questions regarding the vocabulary and the test logistics so as to reduce performance errors unrelated to their actual knowledge of the target linguistic structures.

In the third session, after presenting learners in the experimental group with the Explicit Information (EI) package, developed based on the guidelines provided in VanPatten (2002, 2003), the researcher provided them with explicit oral instruction along with relevant examples of the target structure. The EI package, as suggested by VanPatten (1996), also addressed the possible problems learners would encounter while processing the linguistic form. After 20-minute instruction, learners received the SI package. Through its different referential and affective activities, learners were guided to avoid common processing errors, and process the target form effectively.

As emphasized by VanPatten (2002, 2004), each target form was presented at a different time. Therefore, at this third session, only one linguistic form, active causative, was presented during EI and practiced during the SI phase. During SI practice, learners were not required to *produce* the target structure and were only expected to process the form. After the completion of each task, the researcher asked one learner to answer the question. This was done to provide participants with feedback on their right and wrong responses; the teacher confirmed correct responses with 'yes', and otherwise remained silent (VanPatten, 2002). All the procedures (explanation of the target form, SI activities, and feedback) lasted about an hour.

In the fourth session, initially, the second target structure, the passive causative, was

introduced and practiced. Then, after all treatment procedures were completed, both target forms were reviewed with example sentences. This review was done before administering the posttest to minimize any effects of the one-week gap between the posttests for the two structures (Toth, 2006). Throughout the study, one of the researchers, who also served as the instructor, aimed to ensure consistent administration across all experimental classes. The researcher was always available to address questions related to vocabulary or logistical aspects of the experiment.

In the control group, learners received grammar teaching based upon the course book. During the period in which the PI groups worked with EI and SI activities, the control group was taught the active and passive causative constructions using rule explanations, model sentences, and controlled written exercises drawn from the relevant units of the textbook (e.g., gap-fills, sentence transformations, and short written production tasks). The instructor first explained the form and usage of each causative pattern, then guided learners through the textbook exercises where choral and individual responses were elicited and explicit corrective feedback on errors was provided. The instructor kept time on task and the sequencing of the two target forms (active causative in the third session and passive causative in the fourth session) parallel to the PI treatment, but made no use of any structured input activities. Learners were regularly asked to produce the target structures in writing and, where appropriate, orally.

In order to examine the short-term impact of the experimental treatments, upon the completion of the treatment, Version B of the test, with items reshuffled, was administered as the immediate posttest. Three weeks after the immediate posttest, Version C of the pretest was administered as the delayed posttest. This was done to examine the long-term effect of the treatments. This interval was deemed sufficient to mitigate potential memory effects.

To form a broader landscape of learner attitudes toward PI, interviews were carried out with a sample of 12 participants. The interviews were recorded, transcribed, and analyzed to provide insights into learners' cognitive engagement and their attitudes toward PI.

2.5. Data Analysis

To determine whether learners' recognition of active and passive causative constructions improved through PI, multivariate ANCOVA (MANCOVA) was adopted. Statistical differences were examined, using MANCOVA, in multiple continuous dependent variables for active and passive forms on pretest, posttest, and delayed posttest, as influenced by the independent variable of PI, while controlling for the covariate of pretest scores on active and passive voices. All quantitative analyses were conducted using SPSS (version 28).

With respect to the interview section (addressing the second research question) participants provided detailed explanations for their opinions.

The interview recordings were carefully transcribed and analyzed to extract codes, construct broader concepts and themes, and derive deeper insights addressing the study's research question. In fact, a thematic analysis approach was adopted, and to ensure the trustworthiness of the analysis, the data were coded manually. Coding consistency and interpretation was enhanced through investigator triangulation, consensus coding, wherein a second researcher reviewed the coded data and emerging themes. Discrepancies were resolved through discussion to reach a final consensus.

3. Results

3.1. OQPT Homogeneity Results

An independent samples t-test was conducted to confirm the homogeneity of the experimental and control groups' OQPT proficiency scores. Parametric analysis (independent samples t-test) was employed as four assumptions (interval data, independence of subjects, normality and homogeneity of variances) were met (Field, 2009). Table 1 indicates that the ratios of skewness and kurtosis over their respective standard errors for the two groups' OQPT scores are within the ranges of ± 1.96 denoting that the OQPT scores of the two groups did not violate the normality assumption. In addition, Table 1 shows that the mean scores of the experimental ($M = 27.20$, $SD = 6.63$) and control groups ($M = 26.43$, $SD = 5.98$) were not statistically different.

Table 1.

Descriptive Statistics of the Two Groups' OQPT Scores

Group	N	Mean	SD	SEM	Skewness Ratio	Kurtosis Ratio
Experimental	93	27.20	6.63	.687	1.559	.401
Control	30	26.43	5.98	1.092	.100	-.974

Based on the results presented in Table 2, the assumption of equality of variances was met since the significance value associated with Levene's Test ($p = .64$) exceeded .05. Additionally, as shown in Table 2, independent samples t-test detected no statistically significant difference in the proficiency measures for the experimental and control groups $t(121) = 0.56$, $p = .60$, $p > .05$. As a result, it was concluded that the participants in the experimental and control

groups were homogeneous in terms of English language proficiency.

Table 2.

Independent Samples T-test on the Two Groups' OQPT Scores

Factor	Levene's Test for Homogeneity of Variances		T-test for Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.
Equal variances assumed	.215	.644	.561	121	.602	.771
Equal variances not assumed			.588	53.873	.573	.771

3.2. Research Question One

To identify whether learners' recognition of causatives (passive and active) improved through PI from pretest to posttest and delayed posttest, multivariate ANCOVA (MANCOVA) was utilized. In effect, Pallant (2013) explains that multivariate analysis of covariance (MANCOVA) is a statistical technique that is the extension of the analysis of covariance (ANCOVA). It is the multivariate analysis of variance (MANOVA) with one or more covariates. Through MANCOVA, we examined statistical differences in multiple continuous dependent variables (active and passive voices on pretest, posttest, and delayed posttest) by an independent grouping variable (PI), while controlling for a third variable called the covariate (pretest scores acquired on both active and passive voices). Covariates are added to reduce error terms so that the analysis eliminates the covariates' effect on the relationship between the independent grouping variable and the continuous dependent variables.

The descriptive statistics for the pretest of the learners' active and passive scores in the experimental and control groups were calculated before presenting the results of MANCOVA (Table 3). As demonstrated in Table 3, the participants in the experimental group had a mean score of 4.80 ($SD = 2.61$), which was close to the mean score of those in the control group ($M = 4.37$, $SD = 2.46$) on active voice. Similarly, on the passive voice, the students in the experimental and control groups obtained mean scores of 2.40 ($SD = 2.79$) and 2.33 ($SD = 2.17$) which did not differ significantly from each other.

Table 3.

Descriptive Statistics for Active and Passive Scores by Group (Pretest)

Variable	Group	N	Mean	SD	SEM
Active	Experimental	93	4.80	2.611	.271

Passive	Control	30	4.37	2.456	.448
	Experimental	93	2.40	2.786	.289
	Control	30	2.33	2.171	.396

Additionally, Table 4 below includes the descriptive statistics for the posttest scores obtained on both active and passive voices in the experimental and control groups. As seen in the table, regarding active voice, the students in the experimental group ($M = 7.77$, $SD = 2.38$) outperformed their counterparts in the control group ($M = 6.53$, $SD = 2.33$). Likewise, the same pattern was observed for the passive voice results. The experimental group ($M = 8.01$, $SD = 2.73$) outperformed the control group ($M = 6.50$, $SD = 2.54$).

Table 4.

Descriptive Statistics for Active and Passive Scores by Group (Posttest)

Variable	Group	N	Mean	SD	SEM
Active	Experimental	93	7.77	2.378	.247
	Control	30	6.53	2.330	.425
Passive	Experimental	93	8.01	2.733	.283
	Control	30	6.50	2.543	.464

Moreover, Table 5 summarizes the descriptive statistics for the delayed posttest scores reported for both active and passive voices in the experimental and control groups. As shown in Table 5, for active voice, the students in the experimental group ($M = 7.01$, $SD = 2.82$) had superior performance compared to their counterparts in the control group ($M = 5.50$, $SD = 2.18$). A similar pattern was observed for the passive voice. Students in the experimental group ($M = 5.14$, $SD = 3.35$) surpassed those in the control group ($M = 3.43$, $SD = 2.01$).

Table 5.

Descriptive Statistics for Active and Passive Scores by Group (Delayed Posttest)

Variable	Group	N	Mean	SD	SEM
Active	Experimental	93	7.01	2.819	.292
	Control	30	5.50	2.177	.398
Passive	Experimental	93	5.14	3.351	.347
	Control	30	3.43	2.012	.367

Figure 1 shows that on both active and passive voices, an improvement was observed from pretest to posttest in both experimental and control groups, though the increase in the experimental group was greater than that of the control group. Also, as illustrated in Figure 1, a decrease was observed from posttest to delayed posttest in both experimental and control groups

on both active and passive voices and this decrease is more noticeable for the passive voice compared with the active one. However, the delayed posttest mean score was still substantially higher than the pretest, confirming that PI had a positive impact on learners' recognition of active and passive causative constructions.

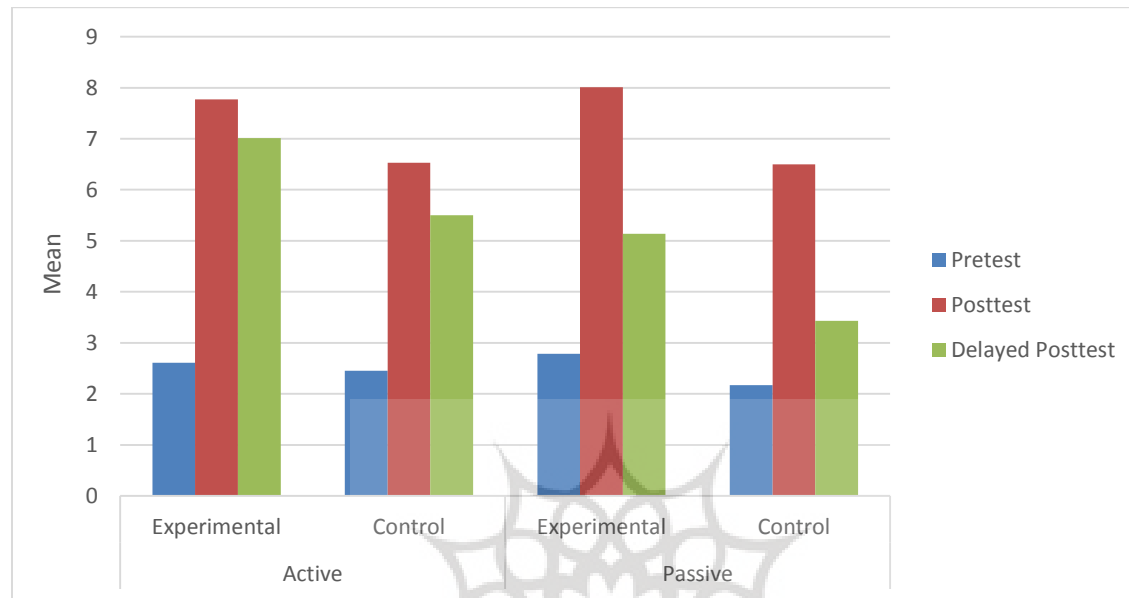


Figure 1. Bar Graph for Active and Passive Mean Scores by Group on Pretest, Posttest, and Delayed Posttest

According to Field (2009), three assumptions (interval data, independence of subjects, homogeneity of variances) should be checked before one chooses to perform parametric statistical tests. In the present study, the first assumption was not violated as the present data were measured on an interval scale.

Moreover, Bachman (2004, p. 236) stated that the assumption of independence of subjects is met when "the performance of any given individual is independent of the performance of other individuals" and this was the case in this research.

In addition, the results of the homogeneity of variances were summarized in Table 6. Table 6 shows that the significance value associated with Levene's test for the four sets of scores i.e., Active Posttest ($p = .57$), Active Delayed Posttest ($p = .07$), Passive Posttest ($p = .34$), and Passive Delayed Posttest ($p = .06$), was larger than the selected significance level ($p > .05$). Thus, homogeneity of variances was not violated for all these four variables.

Table 6.

Levene's Test of Equality of Error Variances for Active and Passive Scores on Pretest, Posttest, and Delayed Posttest

Variable	F	df1	df2	Sig.
Posttest (Active)	.174	1	121	.577
Delayed Posttest (Active)	3.598	1	121	.070
Posttest (Passive)	.915	1	121	.341
Delayed Posttest (Passive)	3.021	1	121	.065

As evident from Table 7, the assumption of homogeneity of covariance was violated (Box's $M = 71.77$, $F = 6.79$, $p = .000$, $p < .05$). To compensate for this shortcoming, the significance level was decreased from .05 to .01 in analyzing the data (Tabachnick & Fidell, 2014).

Table 7.

Box's Test of Equality of Covariance Matrices

Box's M	F	df1	df2	Sig.
71.772	6.790	10	13470.848	.000

As shown in Table 8, multivariate tests indicated that there was a statistically significant difference (Wilks' $\lambda = .84$, $F(4, 116) = 5.66$, $p < .001$) in learners' recognition of active and passive causative constructions between the two groups on the posttest while controlling for the effect of the pretest. The results showed that Partial η^2 was .16, reflecting a moderate effect size based on Cohen's guidelines (1988, pp. 284-287); thus, the first null hypothesis of the study, that learners' recognition of active and passive causative constructions does not improve through PI, was rejected. Therefore, it was concluded that PI positively influences learners' recognition of active and passive causative constructions.

Table 8.

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.775	99.787	4.000	116.000	.000	.775
	Wilks' Lambda	.225	99.787	4.000	116.000	.000	.775
	Hotelling's Trace	3.441	99.787	4.000	116.000	.000	.775
	Roy's Largest Root	3.441	99.787	4.000	116.000	.000	.775
Group	Pillai's Trace	.163	5.660	4.000	116.000	.000	.163
	Wilks' Lambda	.837	5.660	4.000	116.000	.000	.163

Hotelling's Trace	.195	5.660	4.000	116.000	.000	.163
Roy's Largest Root	.195	5.660	4.000	116.000	.000	.163

However, multivariate tests did not specify sources of difference in the experimental and control groups on the posttest and delayed posttest. Therefore, tests of between-subjects effects were run (Table 9). As shown in Table 9, tests of between-subjects effects detected a statistically significant difference in active voice scores between the experimental and control groups on both the posttest $F(1, 119) = 7.66, p = .006, \eta^2 = .07$, and delayed posttest $F_{(1, 119)} = 7.20, p = .008, \eta^2 = .06$. Similarly, for passive voice scores, tests of between-subjects effects found a statistically significant difference in the experimental and control groups on both posttest $F_{(1, 119)} = 13.21, p < .001, \eta^2 = .10$, and delayed posttest $F_{(1, 119)} = 8.24, p = .005, \eta^2 = .06$.

Table 9.

Tests of Between-Subjects Effects for Active and Passive Mean Scores by Group on Pretest, Posttest, and Delayed Posttest

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Posttest (Active)	402.112	3	134.037	51.364	.000	.564
	Delayed Posttest (Active)	322.845	3	107.615	21.436	.000	.351
	Posttest (Passive)	482.067	3	160.689	43.049	.000	.520
	Delayed Posttest (Passive)	465.973	3	155.324	24.624	.000	.383
Group	Posttest (Active)	19.987	1	19.987	7.659	.006	.070
	Delayed Posttest (Active)	36.150	1	36.150	7.201	.008	.057
	Posttest (Passive)	49.292	1	49.292	13.206	.000	.100
	Delayed Posttest (Passive)	51.974	1	51.974	8.240	.005	.065
Error	Posttest (Active)	310.539	119	2.610			
	Delayed Posttest (Active)	597.415	119	5.020			
	Posttest (Passive)	444.193	119	3.733			
	Delayed Posttest (Passive)	750.628	119	6.308			
Total	Posttest (Active)	7579.000	123				
	Delayed Posttest (Active)	6347.000	123				
	Posttest (Passive)	8110.000	123				
	Delayed Posttest (Passive)	3961.000	123				

3.3. Research Question Two

To address the second research question, 12 EFL student participants were interviewed. The researchers carefully read the transcripts, analyzed the codes, and 132 significant statements were extracted from 12 verbatim transcripts. The concepts and themes were classified in order to arrive at broader meanings and interpretations, addressing their attitudes. Then the underlying ideas behind each concept were extracted. Table 10 presents some examples of statements and the formulated meanings behind them.

Table 10.

Significant Statements with their Formulated Meanings

Significant Statement	Formulated Meaning
1) In other grammar classes I attended until now, I actually felt tired and boredom. There were more explanation, hard structures, and lots of exercises. But in this class, I felt excited and relax. Class was really nice and happy experience.	A) This PI grammar class was enjoyable.
2) I am sure that I have improved my grammar a lot; although they were difficult, but it was very helpful to notice new structures in sentences. I had never thought and noticed these structures in an English sentence, however, now I can use them when I'm speaking and usually try to understand the meaning of a sentence when I first know the grammar that is used in it.	B) This method improves oral and written productive abilities.
3) This class was really interesting and new; I have never seen such a perfect way to teach grammar, actually, I didn't know grammar could be practiced with listening activities; there were translations, matching, pictures, multiple-choice ...	C) This method was new and motivating for teaching grammar.
4) <i>In the class, sometimes, the teacher didn't give us enough and good practice. I didn't like it because I needed to more exercise to practice new grammar, and how it is used in different situation. Also I liked to learn the exception about grammar rules and see them in exercises ...</i>	D) Practice is required to support and stabilize learning.

To represent broader categories, the formulated meanings were grouped together, and final themes emerged. The extracted categories revealed key issues. As an example, Table 11 indicates the way the final theme was extracted from the formulated meaning.

Table 11.

Example of four Theme Clusters with their Associated Formulated Meanings

Formulated Meaning	Theme Cluster
1) This PI grammar class was enjoyable.	A) Tasks Enjoyment
2) This method improves oral and written productive abilities.	B) Improvement of Productive Skills

-
- | | |
|---|--|
| 3) This method for teaching grammar was new and motivating. | C) Novelty, Engagement, and Motivation |
| 4) Practice is required to support and stabilize learning. | D) Insufficient Practice |
-

The formulated meaning from the statement “This PI grammar class was enjoyable” led to the theme “Tasks Enjoyment.” Additionally, the formulated meaning “This method improves oral and written productive abilities” resulted in the theme “Improvement of Productive Skills.” The theme “Novelty, Engagement, and Motivation” emerged from the formulated meaning “This method for teaching grammar was new and motivating.” Finally, the formulated meaning “Practice is required to support and stabilize learning” gave rise to the theme “Insufficient Practice.” The four main themes drawn from the interviews were as follows:

A. Tasks Enjoyment. The respondents reported that they experienced enjoyment in doing the PI tasks. They found Pictorial tasks more enjoyable than other tasks. EFL learners reported greater enjoyment in performing pictorial structured input tasks compared to non-pictorial ones. They found pictorial questions easier to answer. In other words, the utilization of pictures effectively contextualized the questions, making the tasks easier to complete. They believed that visual cues in pictures assisted them in answering correctly, which contributed to a sense of success and satisfaction. For instance, Respondent 5 noted that *“The class was really enjoyable. I could do the tasks easily and quickly, then I felt good. My self-confidence increased gradually.”*

The students believed that pictures helped create a positive atmosphere and prevented them from experiencing monotony and dullness in the class that they usually felt in previous grammar classes. In addition, they reported that the combination of grammar exercises and pictures helped them better retain what they had been taught about the target structures. For instance, Respondent 1 asserted that *“In other grammar classes I have attended, I often felt tired and bored due to excessive explanations, complex structures, and numerous exercises. In contrast, in this class I felt excited and relaxed. The class was a genuinely enjoyable and positive experience.”*

However, analyzing the qualitative data revealed that some participants expressed disinterest in certain parts of the class. In fact, this negative attitude stemmed from the difficulty of tasks where they had to select among “True”, “False”, or “I don’t know”. These non-pictorial decision-making tasks were particularly challenging and appealed to only a few students compared to the easier pictorial tasks. As an example, one of the respondents (9) stated that:

Overall, I enjoyed this grammar class; however, in some parts I disliked having to

make decisions when the exercises were difficult. I felt annoyed when ideas did not come to mind. At those moments, I thought I had not learned the grammar point properly, which made me feel disappointed and less confident.

As a result, the qualitative findings revealed that some learners developed negative perceptions of these tasks. This dissatisfaction appeared to stem from their lower proficiency across the four language skills, which influenced both their interpretation of the tasks and, ultimately, their perceived enjoyment. They also expressed that long grammar explanations from the teacher made them feel bored. They believed that formal grammar lessons should be as brief and simple as possible to ensure that most of the class time is devoted to active practice. As Respondent 11 stated:

Overall, it was a pleasant and enjoyable experience; however, in some parts of the class, when the teacher explained for a long time without interruption, I felt bored and confused. I am not sure why the teacher sometimes explained too much. In contrast, when he explained a point briefly and then asked us to do the exercises, the experience was very effective. I learned a great deal from the exercises, and whenever I encountered difficulties and needed further explanation, I asked the teacher for clarification.

B. Improvement of Productive Skills. Another theme that emerged from the qualitative data was “Improvement of Productive Skills” achieved as a result of PI. In fact, the student participants claimed that PI enhanced their grammar knowledge. Accordingly, the findings showed that students were satisfied with the method generally as it improved their ability. For instance, Participant 4 asserted:

I am sure that I have improved my grammar a lot. Although the structures were difficult, it was very helpful to notice new sentence patterns. I had never thought about or paid attention to these structures in English sentences before. However, now I can use them when I'm speaking, and I usually try to understand the meaning of a sentence by first identifying the grammar it contains.

Similarly, Respondent 2 acknowledged that “I think that exercises with pictures helped me learn very effectively. In fact, they made it easier for me to memorize grammar, and I could use these grammatical structures more often when speaking.”

These ideas align with Stern (1992), who argued that merely presenting linguistic facts about a language is insufficient. Instead, providing more opportunities for practice and repetition, supported by effective teaching strategies, is essential. Additionally, the interview data revealed

that the EFL students preferred learning grammar through comprehension-based instruction rather than production-based instruction as these activities helped them with their grammatical awareness, consciousness, and accuracy. As reported by Respondent 6:

As far as I'm concerned, I prefer to participate in classes where I can understand the point first, especially in grammar, which really requires understanding the meaning before speaking or writing. I believe we first grasp something in our minds, and then we can talk, write, and feel it. For example, in this class I learned that English speakers use verbs without "to," "-ing," or "-s" when using "have" to ask someone to do something. Now, I can create many sentences in different situations using this structure.

According to the comments, PI not only enhanced their comprehension but also improved their writing and speaking abilities to a great extent. More precisely, they were aware and conscious of receiving comprehensible input before doing activities. In fact, they perceived and emphasized the importance and the influence of comprehension on production. Participant 3 asserted that:

With this method, my knowledge of grammar has increased. I now understand that it's important to use correct grammar not only to make sentences that others can understand, but also to grasp meaning in skills such as writing and speaking.

C. Novelty, Engagement, and Motivation. Another theme that emerged from the interviewee data was Novelty, Engagement, and Motivation. The participants specifically valued the variety in using the integration of pictorial and non-pictorial types of tasks. For example, one of the participants (12) pointed out the novelty in this way:

This class was really interesting and new. I had never seen such an effective way to teach grammar. In fact, I didn't know that grammar could be practiced through listening activities. The class included translations, matching exercises, pictures, and multiple-choice activities, which made learning engaging and practical.

Another reason for this sense of novelty was the use of pictures in grammar exercises. These images made the questions more understandable, which elevated student motivation and interest in completing the exercises. Surprisingly, the humorous and aesthetically pleasing pictures utilized in the exercises also clearly enhanced student interest in participating in the class. As Respondent 5 noted:

I really want to thank you for showing us that learning grammar can be fun. We would have fewer problems speaking English if we had been practicing grammar in this way from

the beginning. From now on, I will attend more classes like this and recommend them to other students.

The third reason that emerged from the responses was related to the pictorial activities, which appeared fun and engaging during class time. According to their comments, the pictures prepared the ground for a lively and appealing atmosphere, which led to learners feeling less disinterest and boredom. The visual aids not only facilitated involvement in conversations, but also encouraged the use of new forms in their discussions. As a result, students felt more motivated to learn and were inspired to participate more actively in class. As an example, participant 10 pointed out:

I really feel the proverb, "A picture is worth a thousand words," applies perfectly here. In these classes, when I saw a good picture illustrating a grammar point, I immediately became interested in understanding its meaning and grasped it quickly. Sometimes, my curiosity even led me to ask the teacher questions about the point shown in the picture. As a result, I became more motivated than before to use these structures in activities and in my speaking.

D. Insufficient Practice. The next theme that emerged from the qualitative data was "Insufficient Practice." The interviewees, during class time, expressed frustration when they had to sit and listen to the teacher's explanation of a grammatical form without much involvement in practicing the newly presented forms. Interviewees also reported that the explicit information was sometimes too brief, and lacked sufficient detail to understand the lesson. The following excerpt from Participant 8 demonstrates this point:

Sometimes in class, the teacher didn't give us enough or varied practice. I didn't like this because I needed more exercises to practice new grammar and see how it is used in different situations. I also liked learning the exceptions to grammar rules and seeing them applied in exercises.

Furthermore, participants preferred to learn new and complex structures through both explanations and practice, in effect, they found that neither explanation nor practice alone was sufficient for effective learning. This preference raises questions regarding the efficacy of PI, which emphasizes explanation, comprehension and interpretation over production. All of these aspects seem to be necessary for successful learning: explanations pave the way for more effective understanding, while practice consolidates this comprehension. Reflecting this perspective, Participant 7 stated that:

I think that, like children, we first learn by carefully observing, then by trying to copy, make sentences, and practice. After that, we need feedback to know whether we have truly learned it. In class, the situation was the same. At first, when the teacher explained the lesson without practice, I wasn't sure if I had learned it or could use it correctly in real situations in the future.

The interview analysis revealed that the teacher did not assign homework, and students wished for take-home exercises. They desired to study, review their lessons, and complete homework regularly. As a result, the lack of homework assignments was recognized as a limitation of the PI approach. Participant 2 acknowledged these deficiencies and stressed that:

It was a good and effective grammar class, but the teacher didn't assign any homework. I usually do homework at home in my free time and write down my questions and problems to ask the teacher in the next session. This method helped me resolve my difficulties with the grammar and become familiar with mistakes that others make. I wish I had more exercises to practice at home.

Overall, the respondents who experienced PI expressed favorable attitudes toward using it for teaching and learning grammar.

4. Discussion

The present mixed-methods study aimed to investigate the impact of PI on EFL learners' acquisition of active and passive causative constructions in English. The quantitative findings revealed that learners who received PI significantly outperformed those exposed to traditional instruction not only on immediate but also delayed posttests. These results elucidate the lasting gains of PI on both the comprehension and retention of causative grammar over time. This outcome aligns with the core premise of VanPatten's Input Processing model, that manipulating learners' input-processing strategies leads to stronger form-meaning connections and more enduring grammatical competence.

What stands out is that the PI group demonstrated improvements in interpretation of causatives. The participants also reported in their qualitative feedback that their production improved, an outcome not universally observed in earlier studies. As a case in point, Birjandi and Rahemi (2009) reported that although PI and Output-based Instruction (OI) elevated learners' interpretive skills, only OI led to long-term production gains. In our study, however, we found that PI alone appeared sufficient to engender significant gains across both domains, with

improvements in interpretation evidenced by test scores and perceived gains in production emerging from learners' self-reports in the interviews, which is perhaps indicative of the fact that when tasks are meaning-oriented and input-driven, learners can process the target structures more effectively. These findings suggest that PI, when used with contextualized and pictorial input tasks, can act as a dual-purpose tool, lending momentum to both the receptive and productive dimensions of grammatical development.

Of particular note, beyond test scores, learners' voices provided perspectives on how PI was experienced in practice. Qualitative findings from semi-structured interviews, addressing the second research question, illuminated the meaning behind the quantitative data. Learners not only acknowledged the instructional clarity and novelty of PI but also expressed increased motivation and grammatical awareness. These subjective reports are in line with those of Haghani and Rashtchi (2023), who documented similarly positive learner responses in their study of PI for subjunctive structures. Their conclusion, that PI is superior to rule-based grammar instruction, is mirrored in our findings, where participants showed an inclination toward comprehension-driven, visually scaffolded tasks over rule memorization.

The current findings also extend the work of Pouyan et al. (2023), who demonstrated the effectiveness of PI on causative acquisition but relied merely on survey data to assess learner attitudes. In addition to confirming their statistically significant results through pretest, posttest, and delayed posttest, our study enriches them with qualitative evidence that reveals learners' emotional and cognitive engagement with PI.

The progress made by the participants in our research further acknowledged the efficacy of PI in reshaping learners' default processing routines, in particular, their tendency to rely on superficial heuristics such as the First Noun Principle, as outlined in VanPatten and Cadierno's (1993) foundational work. Benati (2022), providing more evidence, employed eye-tracking data to show that structured input contributes to the reduction of the reliance on such inefficient strategies, a phenomenon implicitly mirrored in our learners' elevated performance and self-reported boost in noticing grammatical patterns.

Another study that corroborates ours is by Reinders and Ellis (2009) which sheds light upon enriched input, rather than enhanced input that simply draws attention to forms, which led to more grammatical intake and implicit knowledge. This distinction supports our findings, in which PI's referential tasks, designed to compel learners to process meaning through form, paved the way for greater success than traditional explanations. This is further evidence for the superiority of input-based over rule-based instruction, particularly in the acquisition of more complex

structures, such as causatives, which require more syntactic and semantic mappings.

More recently, several studies have examined PI's impact even on domains unrelated to causatives. Liang and Zhang (2024) confirmed PI's significant learning gains, particularly in the acquisition of classifiers. Their observation that learners reported heightened awareness and processing accuracy is consistent with the metacognitive reflections in our study, where participants often deemed PI to be a consciousness-raising experience that reshaped how they approached grammar comprehension.

Finally, the findings presented in Zhong and Benati's (2024) study, reflective of ours, revealed that structured input combined with referential tasks engendered meaningful improvements in learners' interpretation and production of causatives. As noted in their study, affective tasks per se were insufficient, a pattern mirrored in our learners' comments, which showed their inclination toward tasks involving visual, referential prompts over more abstract or isolated activities.

In sum, the current research contributes to the existing body of knowledge by presenting both qualitative and quantitative evidence, illuminating how effective an intervention like PI can be, particularly when scaffolded by structured, pictorial, and referential input tasks, in addressing the cognitive and pedagogical challenges in the acquisition of English active and, specifically, passive causatives. The resonance between our findings and multiple strands of existing literature, both classic and recent, supports the argument that PI not only strengthens form-meaning mappings, but also may cultivate durable, transferable grammatical knowledge. These results make evident the need to broaden the integration of PI into EFL grammar instruction, expressly in contexts where conventional approaches fail to yield long-term learner engagement or retention. By integrating learners' voices into the evaluation of PI, this study brings into focus both the cognitive and affective dimensions of grammar instruction, and casts a holistic light on its pedagogical worth in EFL contexts.

5. Conclusion

The current mixed-methods investigation sought to shed further light upon the potential of PI to effectively deliver simple and complex constructions to learners. To this end, both quantitative and qualitative data, gathered during instruction on active and passive constructions, were utilized. The former, drawn from repeated-measures MANCOVA, revealed statistically significant and sustained gains in both the comprehension and retention of causatives among

learners exposed to PI, which highlights its effectiveness over traditional instruction. Learners in the PI group not only outperformed their counterparts on immediate posttests but also retained their gains on delayed assessments, an indication of durable learning, resulting from form-meaning integration.

Of equal importance are the qualitative findings which bring to light learners' positive affective responses to the PI methodology. Themes such as Tasks Enjoyment; Improvement of Productive Skills; and Novelty, Engagement, and Motivation reflect PI's ability to pave the way for deep cognitive engagement and learner-centered participation which can be evidence of effective language pedagogy. However, learners' requests for further practice opportunities may signal a need for supplementary form-focused activities or blended homework-based tasks within PI.

Given the findings discussed above, PI can be regarded as a cognitively informed strategy rooted in VanPatten's Input Processing model, and, at the same time, a learner-driven paradigm with the potential to bridge the gap between grammatical accuracy and communicative fluency in EFL contexts. Considering the impact PI exerted on both linguistic performance and student voices, this study champions the view that PI may assume an integral role in EFL grammar curricula specifically where complex syntactic structures pose instructional challenges.

The findings of this study carry several pedagogical implications for key EFL stakeholders. When it comes to learners, PI may provide a structured yet cognitively engaging pathway that assists them in internalizing complex grammatical constructions, which would lead to learners moving beyond rote memorization toward meaningful form-meaning connections. The sustained gains observed on delayed posttests indicate that learners may benefit from PI not only as a short-term instructional tool but as a means of achieving lasting grammatical competence that transfers to communicative use.

For teachers, the results may spotlight the value of integrating PI-based activities into grammar instruction, expressly when addressing syntactically complex structures such as causatives. With supplementary practice opportunities, EFL teachers can complement PI as suggested by learners' qualitative feedback, to consolidate processing gains through output-oriented tasks. These findings indicate that syllabus designers and curriculum developers, on the other hand, may systematically incorporate PI into EFL grammar curricula. Syllabi that allocate explicit space for structured input activities, alongside traditional and communicative tasks, may pave the way for enhancing both accuracy and fluency, which would address a persistent tension in EFL program design. To further establish PI's role in pedagogical grammar instruction, future longitudinal studies across diverse educational contexts are needed to illuminate what lies ahead.

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