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Mixed-Methods Analysis of Pre-Class Input-Driven Exposure and Linguistically Focused Instruction in Flipped EFL Speaking Instruction

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This study compared the efficacy of two flipped classroom models—Linguistically Focused Pre Class Instruction (LFPCI) and Pre-Class Input-Driven Exposure (PCIDE)— versus Traditional Classroom Instruction (TCI) on the speaking proficiency of 73 Iranian EFL learners. A notable contribution of this research was the inclusion of a delayed posttest to assess retention, an aspect neglected in the related literature. Employing a quasi-experimental mixed-methods design, the researcher assessed speaking ability through immediate and delayed posttests, supplemented by qualitative data drawn from classroom observations, rater notes, and focus-group interviews. Quantitatively, the LFPCI group significantly outperformed both other groups on immediate and delayed posttests, demonstrating superior gains and retention. Qualitatively, the LFPCI condition fostered greater engagement, confidence, and accuracy, while reducing native language interference and cognitive demands. Conversely, the other two conditions resulted in lower participation and persistent linguistic challenges. Corroborating Skill Acquisition Theory, these findings underscore the critical role of explicit, linguistically-focused pre-class instruction in achieving durable speaking accuracy in traditional, exposure-limited EFL environments.

Keywords: flipped classroom model, explicit pre-class linguistic scaffolding, pre-class input immersion, skill acquisition theory, input-based approaches

INTRODUCTION

In English as a foreign language (EFL) contexts, limited English exposure outside the classroom and prevailing teacher-centered methodologies often result in passive learning and restricted opportunities for input, output, and interaction, hampered by time constraints (Li, 2025; Zadorozhnyy et al., 2025). The flipped classroom model (FCM), which reallocates lectures to pre-class activities such as videos, has emerged as a promising approach to address these limitations by dedicating in-class time to authentic language use and interaction (Bergmann & Sams, 2012; Torabi, 2024; Xin & Zhang, 2024; Zhong, 2024). Research links FCM to gains in EFL proficiency across the four language skills and improvements in learner autonomy, motivation, willingness to communicate, and attitudes toward learning (Li et al., 2025; Moulavinafchi et al., 2026; Muluk et al., 2025; Wu et al., 2023).

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However, the empirical evidence is not unequivocally optimistic: some studies have reported challenges such as faculty and student resistance, increased workload, difficulties with preparatory assignments and disengagement, which often lead to reduced motivation and heightened anxiety (Cao et al., 2024; Gebregziabher et al., 2025; Irianti et al., 2024; Lan, 2024). Such variability in outcomes highlights the model's context-dependent effectiveness and the need to adapt it to specific educational settings. This adaptation is particularly critical in non-Western, teacher-centered contexts like Iran (Mahvelati, 2021), raising questions about its potential to enhance engagement and oral proficiency in such cultures.

Oral proficiency presents the most significant challenge for EFL learners (Phanwiriyarat et al., 2025; Zhong, 2024). Despite substantial empirical and theoretical support for FCM's efficacy in developing speaking skills, crucial questions endure regarding how to most effectively support learners in mastering essential linguistic foundations, such as vocabulary, grammar, and pronunciation, which are essential for fluency and accuracy. Specifically, it is not yet clear whether these components should be addressed explicitly during the pre-class phase or reserved for in-class instruction—a dilemma aligned with ongoing debates in Second Language Acquisition (SLA) concerning the merits of explicit, conscious learning versus implicit, immersion-based acquisition. This study, therefore, aims to rigorously assess the comparative efficacy of these two pedagogical strategies within the FCM framework for boosting learners' oral proficiency.

Moreover, although numerous studies have examined the short-term effects of FCM on speaking proficiency, to date no empirical research has tested the long-term retention of these gains using delayed post-test designs. Addressing this omission is crucial, since a comprehensive evaluation of pedagogical effectiveness requires demonstrating that the learning gains are sustained over time.

In summary, two key research gaps persist: the comparative effectiveness of explicit versus implicit pre class strategies in preparing EFL learners for in-class communicative tasks, and the long term retention of FCM related speaking gains. To address these gaps, the present study compared the impacts of these two pre-class strategies on both immediate and sustained oral proficiency among Iranian EFL learners. Methodologically, this study introduces a delayed post-test design to provide empirical evidence on the durability of learning outcomes. By evaluating short- and long-term outcomes, this research aims to inform evidence-based instructional design and contribute new insights into optimizing pre-class preparation in EFL settings that employ FCM.

LITERATURE REVIEW

FCM is rooted in constructivist and social constructivist theories (Piaget, 1970; Vygotsky, 1978), synthesizing these principles through active, student-centered learning that shifts content engagement to pre-class study and fosters autonomy via self-regulation. Drawing on sociocultural theory (Vygotsky, 1978), it structures in-class time as socially mediated collaboration within learners' zones of proximal development. Communicative and interactionist perspectives (Long, 1996), alongside the Input

(Krashen, 1985) and Output (Swain, 1993) Hypotheses, complement this by emphasizing the role of authentic interaction, comprehensible input, and output for language development. Task-based language teaching (Nunan, 2004) operationalizes these frameworks, with Computer-Assisted and Mobile-Assisted Language Learning tools enabling pre-class preparation and interactive, task-based application during class.

Guided by Bloom's taxonomy (Bloom, 1964), FCM assigns lower-order processes (e.g., remembering, understanding) to pre-class phases and reserves higher-order processes (e.g., analyzing, creating) for face-to-face sessions. This contrasts with traditional, lecture-first approaches and aims to maximize cognitive engagement with advanced skills during in-class time. Yet, the optimal pre-class method—whether input exposure or explicit linguistic instruction—remains unresolved, illustrating the fundamental dichotomy between input-based approaches (e.g., Krashen, 1985) and Skill Acquisition Theory (SAT; see DeKeyser, 2015).

Competing Theoretical Models for Pre-class Instruction

This theoretical tension directly informs the study's two experimental conditions. The first, Linguistically Focused Pre-Class Instruction (LFPCI), is grounded in SAT (DeKeyser, 2015)**,** which frames L2 learning as a staged progression from declarative to procedural knowledge, culminating in automatization. Accordingly, this approach requires explicit pre-class instruction to establish a conscious rule base, followed by in-class practice to consolidate skills. In contrast, the second condition, Pre-Class Input-Driven Exposure (PCIDE), derives from frameworks such as the Input Hypothesis (Krashen, 1985) and Usage-Based theories (Tomasello, 2003)**.** These models view language acquisition as implicit pattern formation driven by repeated exposure to comprehensible input, which is then activated during in-class communicative tasks.

To adjudicate between these competing pedagogical approaches, this study draws on Cognitive Load Theory (CLT; Sweller, 1988) as a conceptual lens. CLT suggests that working memory has limited capacity, and overwhelming it can hinder learning. Synchronous speaking tasks are inherently high in cognitive demand, requiring learners to manage formulation, articulation, and monitoring simultaneously. The SAT-grounded approach (LFPCI) hypothesizes that explicit pre-instruction reduces intrinsic cognitive load by proceduralizing declarative knowledge, thereby freeing attentional resources for fluent communication. Conversely, the input-immersion approach (PCIDE) posits that extensive exposure to comprehensible input fosters the development of implicit linguistic representations. It is theorized that these representations can be accessed more efficiently during real-time production, a process that could potentially lower the associated cognitive demands. By comparing these two conditions, this research sought to investigate which pre-class instructional design more effectively manages this cognitive load during real-time L2 production.

Empirical Studies on FCM and Speaking Skill

Empirical research into the efficacy of FCM for enhancing L2 speaking proficiency reveals a significant theoretical and methodological division, primarily centered on the design of pre-class activities. The literature can be broadly divided into two distinct

approaches: those favoring pre-class input exposure and those advocating for explicit linguistic scaffolding. A substantial body of research supports the input immersion approach, where pre-class activities provide exposure to authentic, comprehensible input. Studies conducted in various EFL contexts, including Iran (Amiryousefi, 2019; Demir & Mirzaie, 2023; Hashemifardnia et al., 2021), Indonesia (Pratiwi et al., 2022), Saudi Arabia (Sheerah and Yadav, 2022) and Malaysia (Santhanasamy & Yunus, 2022), consistently report that learners who engage with multimedia input before class demonstrate significant gains in speaking performance, communicative willingness, and autonomy compared to those in traditional settings.

Nevertheless, this perspective is not universally supported, and a critical view of the evidence suggests that passive input may be insufficient. Some action research indicates that while engagement may increase, significant improvements in speaking scores do not always follow (Lee & Wallace, 2018). More pointedly, Chen and Hwang (2020) found that an experimental group required to complete an explicit cognitive task (concept mapping) after viewing pre-class videos significantly outperformed a control group that only took notes, particularly in lexical resource and coherence. This finding strongly suggests that cognitively demanding tasks, rather than mere exposure, are crucial for optimizing learning outcomes. The insufficiency of mere input exposure was also underscored by Yeşilçınar (2019), who demonstrated that learners' oral improvements in a flipped context were restricted to explicitly targeted linguistic features. For instance, pronunciation did not improve as it was not explicitly addressed at the pre-class phase. This highlights the need for direct and systematic instruction.

Conversely, a parallel stream of research champions the integration of explicit linguistically-focused instruction into pre-class activities. These studies demonstrate that front-loading direct instruction on grammar, vocabulary, or pronunciation facilitates the reallocation of in-class time to meaning-focused, interactive practice. This model has been shown to produce significantly greater gains in public speaking, fluency, accuracy, and pronunciation than both traditional lecture-based and standard Communicative Language Teaching approaches (Amir et al., 2025; Irianti et al., 2024; Khodabandeh, 2025). Research suggests these performance gains are underpinned by the model's capacity to foster learner autonomy through self-regulation (Kusuma, 2020) and to enhance confidence by providing personalised support (Zhong, 2024). Despite these promising outcomes, the literature indicates that the model's effectiveness is highly sensitive to its design and pedagogical implementation. Fischer & Yang (2022) illustrate this point, finding that a low-accountability design with asynchronous tasks was less effective than traditional instruction, while a design promoting synchronous collaboration yielded far superior results.

A synthesis of the existing empirical evidence reveals several critical gaps. First, there is a clear absence of direct, controlled comparisons between FCMs based on input-immersion and those based on explicit-instruction formats. Second, the reliance on immediate pretest-posttest designs means the long-term retention of learning gains remains uninvestigated. Third, there is insufficient analysis of the underlying behavioral factors—such as in-class engagement patterns—that mediate learning outcomes.

Finally, inconsistencies in the reported efficacy of different FCM designs necessitate rigorous investigation.

The present study is therefore designed to address these deficiencies by systematically comparing the immediate and sustained effects of Linguistically Focused Pre-class Instruction (LFPCI) and Pre-class Input-Driven Exposure (PCIDE) with those of Traditional Classroom Instruction (TCI) on Iranian EFL learners' speaking proficiency. It further examines the underlying behavioral mechanisms shaping these outcomes. Accordingly, the study is guided by the following central research question:

What is the differential impact of LFPCI, PCIDE, and TCI on immediate gains and long-term durability of speaking proficiency among Iranian EFL learners?

METHOD

Research Design

This research employed a quasi-experimental mixed-methods design, primarily quantitative but enriched by qualitative data. It combined speaking pre- and post-tests with findings from focus-group interviews, classroom observations, and raters' notes. This integrated approach afforded a detailed explication of not only the statistical findings but also the behavioural mechanisms shaping the learners' performance.

Participants

The study's cohort comprised 73 Iranian engineering undergraduates who were assigned, based on intact classes, to a control group (n=25) and two experimental groups (n=24 each). An upper-intermediate level of English proficiency, which was established based on prior university placement scores and course grades, was subsequently confirmed using the Oxford Placement Test (Allen, 2004). A one-way ANOVA conducted on their pre-test speaking scores showed no statistically significant initial differences, enabling valid post-intervention comparisons. Institutional ethical approval was secured prior to any data collection. Furthermore, all participants provided informed consent, and their anonymity was protected through the use of pseudonyms.

Instruments

English Proficiency Verification

The Oxford Placement Test (Allan, 2004) was employed to ascertain the participants' English proficiency and ensure their baseline similarity. This instrument, which contains 200 multiple-choice items focused on grammar and listening, exhibited robust reliability within the present study, yielding a Cronbach's alpha coefficient of .89.

Oral Proficiency Assessment

To measure speaking proficiency, a customised oral assessment modelled on the IELTS Speaking Test was administered at three intervals: before the intervention (pretest), immediately after (immediate posttest), and following a three-week delay (delayed posttest). This interval was carefully chosen to assess sustained retention while precluding the confounding influence of new coursework in the subsequent academic

term. For reasons of practicality, the instrument was streamlined to include an IELTS-style cue card (Part 2) and two Part 3-type questions, omitting Part 1. While the thematic content remained consistent across all three tests, specific question prompts were varied to prevent practice effects. Two independent raters—the researcher and an expert IELTS instructor with 20 years of experience—evaluated all performances against the public IELTS Speaking Band Descriptors. To ensure standardised application of these criteria, the raters first conducted a calibration session, and the expert rater was kept blind to the participant allocation and test timing. This dual-rating procedure confirmed a high degree of scoring consistency, yielding inter-rater reliability coefficients between 0.895 and 0.933 across all subcomponents.

Classroom Observations

The researcher, serving as both course instructor and researcher, gathered qualitative data by maintaining detailed field notes during all instructional sessions. These unstructured observations documented key classroom dynamics, including learner engagement, peer interaction, in-class language application, and general conduct. This observational record was instrumental for enabling a comparative analysis of the two experimental groups and the control group. It provided vital context for interpreting posttest results and yielded a more fine-grained perspective on the efficacy of each pedagogical model.

Raters' Evaluations

A further source of qualitative data was the narrative commentary provided by the speaking test raters. In these written evaluations, the assessors detailed each candidate's performance across key criteria, including fluency, pronunciation, and lexical-grammatical accuracy. This granular feedback on individual proficiencies and challenges offered an interpretive lens, helping to contextualise the quantitative findings and provide a more holistic understanding of the differential impacts of the instructional models.

Focus-group Interviews

To provide explanatory depth and ensure data triangulation, semi-structured focus-group interviews were utilized. All participants were interviewed twice—once after the immediate posttest and again after the delayed posttest— to explore their cognitive, affective, and behavioural engagement. The primary aim was to illuminate the mechanisms—such as shifts in confidence, willingness to participate, and employed learning strategies—that could explain the quantitative results as well as the classroom observations and raters' notes. The interviews were conducted in Persian within small, homogenous groups based on instructional condition, using distinct protocols for each. Prior to analysis, the transcripts were translated into English. A second bilingual expert independently verified the translations against the original transcripts to ensure semantic equivalence, with any discrepancies resolved by consensus. The researcher and a second expert then performed a thematic analysis of the transcribed data, adhering to Krueger's (2014) framework which entails a multi-stage progression from initial data review and theme identification to systematic data organization, concluding with an

interpretive analysis. To ensure the reliability, both analysts independently coded the data, achieving a high degree of initial agreement (Cohen's $\kappa = .85$). Any disagreements were discussed until a consensus was reached. Importantly, themes were derived not only from interview data but also from patterns identified within classroom observations and rater commentary.

Methodological Rigor and Trustworthiness

To mitigate potential bias from the researcher's dual role as instructor, several measures were implemented to ensure methodological rigour. The primary safeguard was the involvement of a second, independent expert in data analysis. For qualitative data, this expert co-analysed the data, with all discrepancies resolved through consensus. For the quantitative speaking assessments, an expert IELTS instructor, blind to participant allocation and test timing, served as a second rater; high inter-rater reliability (coefficients .895–.933) confirmed objective scoring. The study's trustworthiness was further strengthened through expert panel oversight and the systematic triangulation of all data sources.

Research Procedure

This research utilized a 35-session English course, comprising three 105-minute sessions per week, focused on developing participants' general oral proficiency and IELTS speaking abilities. At the outset, all participants attended an orientation to familiarise them with the course logistics and assessment criteria, followed by a pretest to benchmark their initial speaking proficiency. The cohort was divided into two treatment groups (LFPCI and PCIDE) and a control group (TCI). To ensure the comparability of the conditions, a single instructor taught all sessions, and identical instructional resources were used throughout.

In the PCIDE condition, an initial orientation was conducted to equip learners with time management techniques for their out-of-class work. This intervention was designed to proactively address established concerns that the heavy workload associated with flipped models can negatively impact student motivation. The instructor offered practical guidance on integrating language learning materials, such as videos and audio files, into daily routines to ensure continuous exposure to English. All instructional resources, including multimedia content, transcripts, and supplementary materials, were delivered via a Telegram group for mandatory review before class. To foster accountability and peer-supported learning, learners were paired to collaboratively create and rehearse dialogues based on the pre-class content. These recorded role-plays, which served as evidence of collaborative scaffolding in line with social constructivist principles, were submitted for review one to two days before the scheduled session. Furthermore, a weekly comprehension quiz on the preparatory material was administered to reinforce consistent engagement, a practice supported by research highlighting its importance for successful flipped instruction (Chen Hsieh et al., 2017). The instructor's role was not passive; online office hours were maintained to support learners' transition towards autonomy and address their queries, underscoring the necessity of teacher presence in this phase as highlighted by Gondra & Aguiló-Mora, 2024.

In-class activities centered on reviewing students' recorded role-plays, which were assessed using IELTS rubrics and feedback from the teacher and peers. The teacher also clarified pre-class concepts and provided targeted linguistic explanations with multimedia materials when students made errors or requested further clarification. Subsequent sessions, grounded in social constructivist principles, featured interactive peer-to-peer tasks including thematic discussions, mock IELTS interviews, dialogue completion and further role-playing exercises. Active participation was required, with students elaborating on input materials in group and whole-class discussions. The instructor acted as a facilitator, providing targeted feedback on linguistic accuracy, fluency, and coherence. Peer evaluation and the application of new language were also actively encouraged to create a dynamic and collaborative learning environment.

The LFPCI group's instructional design, while similar to the PCIDE condition, distinctly aligned with SAT. It incorporated explicit pre-class instruction on core language elements—vocabulary, grammar, and pronunciation—using teacher-generated multimedia and targeted exercises. To ensure diligent preparation, the assessment protocol was twofold. Weekly comprehension quizzes were supplemented by an additional test specifically assessing these linguistic targets, which was administered at the start of each week to verify material engagement.

In contrast, the TCI control group followed a traditional instructional framework where all learning materials were presented in-class. Instruction adhered to a communicative methodology; the teacher facilitated discussions, introduced linguistic forms, and managed collaborative work with regular feedback. Consistent with the other conditions, each week concluded with an IELTS cue card task requiring a subsequent individual presentation. Following the intervention, the assessment protocol included immediate and delayed post-tests for all participants, separated by a three-week interval. The focus-group interviews were conducted with the participants following each posttest administration.

FINDINGS

Quantitative Results

Assumptions underlying the main analysis were examined. The data met the assumption of normality (Shapiro–Wilk tests, all ps > .05), but Mauchly's test revealed a violation of sphericity (W = .814, $\chi^2(2)$ = 14.17, p < .001). Accordingly, Greenhouse–Geisser adjusted values were reported where required. A mixed-design repeated measures ANOVA was performed to analyse learning gains. The results showed a significant Time × Group interaction, $F(3.37, 118.08) = 33.09$, $p < .001$, $\eta^2p = .486$ [95% CI .38, .56], which confirms that the groups' scores developed differently over time. The main effects of Time, ($F(1.69, 118.08) = 244.08$, $p < .001$, $\eta^2p = .777$ [95% CI .71, .82]) and Group ($F(2, 70) = 18.51$, $p < .001$, $\eta^2p = .346$ [95% CI .22, .45]), were also significant.

To further test the robustness of these findings, separate one-way ANCOVAs were conducted on the immediate and delayed post-test scores, with pre-test performance as a covariate. The analysis confirmed that the effect of Group remained highly significant for both the immediate post-test, $F(2, 69) = 23.97$, $p < .001$, partial $\eta^2 = .410$, and the

delayed post-test, $F(2, 69) = 29.56$, $p < .001$, partial $\eta^2 = .461$. These results corroborate the primary findings reported here, confirming that the observed differences were not attributable to pre-existing variations in proficiency.

Post hoc Bonferroni-adjusted comparisons (see Table 1) revealed that the LFPCI group significantly outperformed both the TCI ($p < .001$) and PCIDE ($p < .001$) groups. However, no significant difference was found between the TCI and PCIDE groups ($p = .302$). These results indicate the superior performance of the LFPCI group primarily drove the overall group differences.

Table 1
Post hoc Bonferroni-adjusted pairwise comparisons.

Group 1	Group 2	Mean Difference	Std. Error	p	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
TCI	LFPCI	-.531*	.08	.000	-.752	-.311
TCI	PCIDE	-.149	.08	.302	-.369	.070
LFPCI	PCIDE	.382*	.09	.000	.159	.605

**Significant at p < .05.*

Subsequent analyses, as presented in Table 2, demonstrated that the groups did not differ significantly at the pretest stage ($p > .05$). At the immediate posttest, the LFPCI group ($M = 7.84$, $SD = 0.33$) achieved significantly higher scores than both the PCIDE group ($M = 7.38$, $SD = 0.42$), $t(46) = 4.13$, $p < .001$, $d = 1.20$ [95% CI 0.51, 1.81], and the TCI group ($M = 7.05$, $SD = 0.39$), $t(47) = 7.02$, $p < .001$, $d = 2.21$ [95% CI 1.34, 2.68]. The effect sizes for these differences were large, underscoring the substantial advantage of the explicit pre-class linguistic scaffolding. Although the PCIDE group also outperformed the TCI group, $t(47) = 2.92$, $p = .010$, $d = 0.82$ [95% CI 0.24, 1.41], the strength of this effect was notably weaker than those found for the LFPCI condition.

At the delayed posttest, the LFPCI group ($M = 7.43$, $SD = 0.32$) maintained its significant and substantial advantage over both the TCI group ($M = 6.65$, $SD = 0.40$, $t(47) = 7.49$, $p < .001$) and the PCIDE group ($M = 6.72$, $SD = 0.29$, $t(46) = 8.11$, $p < .001$). Both differences constituted very large effects ($d = 2.14$ [95% CI 1.45, 2.83] and $d = 2.31$ [95% CI 1.58, 3.01], respectively). In contrast, the PCIDE and TCI groups no longer differed significantly from each other ($p = .739$), with the magnitude of the difference being small ($d = 0.20$ [95% CI -0.39, 0.75]). Crucially, the LFPCI group was the only one to show a statistically significant improvement from the pretest to the delayed posttest ($\Delta = +0.78$, $p < .001$). The TCI ($\Delta = +0.01$, $p = .915$) and PCIDE ($\Delta = +0.04$, $p = .351$) groups, however, reverted to their pretest levels. Although all conditions showed a significant decline in performance from the immediate posttest ($ps < .001$), the evidence indicates that only the LFPCI intervention produced a sustained improvement in speaking ability over time.

Table 2
Descriptive statistics and post hoc results for the participants' scores on the speaking tests.

Time	Group	N	Mean	SD	Post hoc
Pretest	LFPCI	24	6.65	.28	LFPCI = PCIDE = TCI
	PCIDE	24	6.68	.33	
	TCI	25	6.64	.38	
Immediate posttest	LFPCI	24	7.84	.33	LFPCI > PCIDE > TCI
	PCIDE	24	7.38	.42	
	TCI	25	7.05	.39	
Delayed posttest	LFPCI	24	7.43	.32	LFPCI > PCIDE = TCI
	PCIDE	24	6.72	.29	
	TCI	25	6.65	.40	

Qualitative Results

Analysis of the classroom observations, raters' notes and focus-group interviews revealed a set of interconnected themes that provided deeper insights into the nature of classroom interactions, learner experiences and performance differences across groups.

Learner Participation and Engagement Dynamics

Classroom observations revealed a clear disparity in participation: the learners in the flipped conditions engaged more actively and at greater length, whereas those in the TCI group were predominantly passive, contributing only brief remarks and requiring instructor prompts to speak.

Confidence and Apprehension in the Classroom

The data indicated that reviewing materials beforehand in the flipped conditions enhanced learner confidence and alleviated anxiety, fostering greater in-class participation. This affective benefit was most pronounced in the LFPCI group.

> "…Studying the materials multiple times before class made me feel calmer and more assured during English speaking activities."

The learners in the LFPCI group reported that the explicit, advance language instruction provided the scaffolding required for their confident engagement in the classroom activities.

> "I tended to be silent in speaking classes. I had things I wanted to say but I couldn't find the right vocabulary …. I was anxious about making errors that would make me seem foolish to my classmates."

The TCI cohort, by contrast, exhibited a pattern of anxiety-induced reticence. The classroom observations confirmed the self-reported data indicating that participation was suppressed by perceived linguistic deficits and a fear of making mistakes, with engagement limited to a few intrinsically motivated students.

Readiness, Collaborative Engagement, and Feedback Behaviour

Analysis of the observational and interview data revealed that students in the FCM conditions consistently demonstrated superior readiness for the in-class tasks, which promoted smoother lesson execution and more vigorous participation in discussions. The TCI group, however, exhibited greater reluctance and needed extra planning time, disrupting instructional momentum and diminishing interaction quality. The FCM participants attributed their enhanced participation to the opportunity to develop initial thoughts via pre-class materials.

A further distinction emerged between the flipped conditions: LFPCI students displayed greater fluency, coherence, and more frequent peer-to-peer engagement than their PCIDE counterparts. The interview data suggested that the explicit linguistic groundwork provided to the LFPCI group enabled more rapid and confident access to language, thereby enhancing their in-class performance. Notably, this confidence extended to peer correction, which was almost exclusively practiced by the LFPCI students. The other two groups largely refrained from offering feedback, attributing their reticence to their own perceived linguistic uncertainty.

Application and Accuracy of Intervention language Forms

The teacher's observations documented stronger incorporation of the target lexical and grammatical items by the LFPCI learners, accompanied by fewer pronunciation errors. The students attributed their state of linguistic readiness to two main factors identified during the interviews: pre-class linguistic tutorials and the knowledge of recurring, high-stakes evaluations. The substantial weight these assessments carried in their final course grades prompted diligent review and practice of the pre-class content.

The PCIDE learners used more intervention items than their TCI counterparts. However, their application of these items tended to be only partially accurate and marked by a greater number of pronunciation and lexical/grammatical errors compared to the LFPCI learners. The PCIDE group attributed their weaker accuracy to the pre-class focus on content comprehension rather than language forms:

> "Our priority was content comprehension over linguistic analysis."

A minority of the PCIDE students gradually engaged more with linguistic elements in the pre-class input, motivated by self-improvement goals. Nevertheless, most participants in the PCIDE and TCI groups perceived that two factors restricted their ability to apply linguistic forms accurately: receiving explanations and feedback only when errors occurred in class, and the consequent limitation on opportunities for practice.

L1 Interference and Translation Habits

A greater prevalence of negative transfer from Persian (L1) was observed in the TCI and PCIDE groups, a finding corroborated by interview data revealing the learners' frequent use of word-for-word translation:

> "I think in Persian first, then translate my sentences into English."

According to both the teacher and rater feedback, reliance on literal translation resulted in systemic errors, unnatural phrasings, and a greater need for in-class error correction within these groups.

Opportunities for In-Class Practice

The allocation of class time varied significantly by group. The PCIDE and TCI groups required extensive remediation for linguistic errors, which reduced their time for communicative tasks. The LFPCI group, however, benefited from pre-class language instruction, which freed up class time for more meaningful practice. The TCI group faced the greatest time constraint, as all instruction occurred during class, leaving the least room for practice.

Information Retrieval and Sustained Retention

The raters' posttest evaluations aligned with the in-class patterns. The LFPCI participants showed superior retention of the intervention-based linguistic items, improved collocations, better pronunciation, and less L1 negative transfer. As a result, despite not being entirely flawless, their responses demonstrated greater clarity and accuracy in comparison to the other groups. Furthermore, the regular employment of the language features from the intervention led to more fluent speech, attributable to a decrease in pauses. Conversely, the PCIDE and TCI groups exhibited frequent L1 transfer, pronunciation errors, and lexical and grammatical inaccuracies, which increased over time.

While the PCIDE outperformed the TCI on the immediate posttest in areas such as vocabulary and fluency — benefiting from partial uptake of the intervention items — this advantage dissipated on the delayed posttest. Several PCIDE students described partial, fragile recall, which diminished their confidence:

> "I could remember the word, but it felt like a shadow of the sound — it was there, yet I could not bring it fully into my sentence."

The TCI participants similarly reported retrieval failures, and both groups stated that their retrieval difficulties were exacerbated in the delayed posttest. The raters' evaluations revealed that all three groups experienced a decline in their delayed posttest performance. Despite this trend, the LFPCI learners maintained superior performance, exhibiting higher retention with fewer hesitations and linguistic lapses. They attributed this success to consistent pre-class engagement and repetitive in-class practice. Conversely, both the TCI and PCIDE groups cited insufficient practice as a barrier to learning. The PCIDE participants specifically suggested that pre-class linguistically-focused instruction would have freed up class time for practice and improved their retention. Finally, the interview data corroborated the raters' and teacher's reports, confirming a greater reliance on translation strategies among the PCIDE and TCI students. All groups agreed that the overall decline in retention stemmed from a lack of rehearsal opportunities between the tests, which resulted in knowledge erosion.

DISCUSSION AND CONCLUSION

This study makes a novel contribution to the FLM literature by identifying a more effective pre-class instructional strategy. The findings provide compelling evidence that linguistically focused pre-class instruction offers substantial pedagogical benefits, a conclusion consistent with prior research (Amir et al., 2025; Irianti et al., 2024; Khodabandeh, 2025; Zhong, 2024). The outcomes of this research extend their work by demonstrating that these gains are not only immediate but are also retained over time, highlighting the durable impact of this pedagogical approach. More precisely, the quantitative analyses revealed that students in the LFPCI condition significantly outperformed both the PCIDE and TCI cohorts on both the immediate and delayed posttests. Large to very large effect sizes (e.g., d = 2.31 on the delayed posttest) demonstrate the practical significance of this improvement. Although some performance decline was observed over time, statistically significant learning gains persisted solely within the LFPCI group from the pretest to the delayed posttest. This outcome confirms the distinctive efficacy of this instructional design in facilitating durable language acquisition.

The qualitative data from the interviews, teacher's observations, and rater commentary illuminated the quantitative findings, suggesting that the LFPCI group's superior outcomes were closely linked to its front-loaded linguistic support before class. This structured preparation—combining linguistic, affective, and cognitive support—enabled learners to enter class ready for higher-order communicative tasks rather than basic language instruction. As a result, the classroom interaction became richer, with greater linguistic precision, a broader lexical range, and reduced reliance on L1. The model's effectiveness aligns with Cognitive Load Theory (Sweller, 1988), as shifting linguistic processing to the pre-class phase appeared to ease cognitive demands during real-time communication and lessen anxiety. Concurrently, the design operationalizes SAT (DeKeyser, 2015), systematically guiding the conversion of declarative knowledge into procedural skill. The structured rehearsal inherent in the model fortified the encoding, consolidation, and long-term retrieval of language structures. This process cultivated a level of durable retention that was not achieved by the other instructional groups.

Moreover, regularly administered formative tests encouraged learners to engage consistently in pre-class study and interact actively with the core language forms, thereby bolstering both linguistic attainment and self-assurance. For Iranian learners, whose motivation is strongly grade-oriented (Mahvelati, 2021), such evaluations markedly increased preparation efforts and mitigated typical barriers to flipped instruction, including reluctance toward advance study and discomfort with unfamiliar pedagogical approaches. These outcomes directly address long-standing concerns regarding the practical viability of FCM reported in earlier scholarship (Cao et al., 2024; Gebregziabher et al., 2025; Irianti et al., 2024; Lan, 2024).

The LFPCI model also conferred notable affective benefits: enhanced linguistic preparedness fostered greater communicative confidence and participation while alleviating anxiety. This readiness led to competent, frequent peer correction and collaboration that reinforced learning—a pattern consistent with Sato's (2017) dual

model (see Mahvelati, 2021, for further discussion). Such constructive interactions were largely absent in the other groups, in which lower linguistic confidence impeded analytic engagement and peer feedback. These findings align with sociocultural theory's emphasis on structured collaboration promoting learner autonomy within the zone of proximal development (Vygotsky, 1978).

In contrast, the PCIDE approach, informed by the Input Hypothesis (Krashen, 1985) and Usage-Based theories, produced only a modest and ephemeral advantage over the TCI group. Although PCIDE participants initially demonstrated greater fluency and use of target forms, due to content familiarity as observed in interviews and class interactions, this lead was not retained at the delayed posttest. This transient boost is consistent with studies confirming that pre-class comprehensible input can enhance immediate performance (Demir & Mirzaie, 2023; Hashemifardnia et al., 2021; Sheerah and Yadav, 2022; Santhanasamy & Yunus, 2022). However, the erosion of these gains highlights the insufficiency of input-only methods for fostering sustained linguistic accuracy without explicit attention to form.

The qualitative analysis shed light on the reasons behind the limited, temporary gains of the PCIDE and TCI groups. The superior, durable outcomes of the LFPCI group were attributed to its integration of explicit linguistic preparation prior to class, the extrinsic motivation of graded quizzes, iterative and guided practice, and active in-class application of the learned forms. This multi-stage engagement aligns with the principle of distributed repetition, which is critical for long-term retention (Ebbinghaus, 1913). In contrast, this pedagogical structure was absent in the other instructional conditions, which led to greater cognitive load and anxiety.

Specifically for the PCIDE group, their preparation was typically limited to semantic comprehension, resulting in minimal cognitive engagement with the linguistic items. Although a small subset of participants spontaneously focused on linguistic features—a variance likely attributable to individual differences in attentional cognitive styles (Mahvelati, 2020)—most adopted a meaning-first approach. This directly undermined their ability to retrieve and apply the language forms accurately in real-time discourse, leading to recurrent inaccuracies, unnatural structures, and a heavy dependence on L1 translation, which frequently resulted in communicative failure. These findings support Yeşilçınar's (2019) argument regarding the necessity of pre-class direct language teaching, thus questioning the sufficiency of rich input alone for durable oral accuracy (e.g., Pratiwi et al., 2022; Sheerah & Yadav, 2022).

Furthermore, the classroom observations suggested that the LFPCI model more closely actualized the pedagogical architecture of a flipped classroom as envisioned by Bloom (1964). By shifting lower-order tasks like vocabulary learning and grammar study to pre-class work, the in-class time was successfully reallocated to advanced, collaborative tasks such as critical analysis and inventive language production. This efficiency maximized meaningful communicative engagement, fulfilling the primary objective of FCM.

Repeatedly documented in both the raters' and teacher's reports, L1 interference constituted a persistent difficulty, especially for learners in the PCIDE and TCI

conditions. Insufficient internalisation of the target structures compelled these students to generate utterances in Persian and then translate them into English, producing frequent inaccuracies and non-idiomatic phrasing. Conversely, the LFPCI learners had more readily retrievable language resources, showed reduced reliance on translation strategies. They produced speech that was notably more accurate, natural and fluent. These results suggest that explicit, form-focused scaffolding and systematic rehearsal before communicative tasks can substantially reduce L1 interference—a prominent impediment in foreign language acquisition—particularly within input-poor EFL contexts.

While these findings emerge from an Iranian EFL context, they prompt a necessary discussion on the model's adaptability. The pronounced success of the linguistically-focused pre-class instruction is likely amplified in input-poor environments, where such structured instruction compensates for a lack of external language exposure. In contrast, within an input-rich ESL setting, constant immersion might reduce the need for such preparation, potentially favouring more implicit models. Furthermore, the model's effectiveness could be mediated by variables such as L1-L2 linguistic distance and motivational orientation; the formative assessments that proved highly effective for this grade-oriented cohort may require adaptation in cultures emphasizing intrinsic rewards over grades. This suggests that the optimal pedagogical design is not universal but context-sensitive, underscoring the need for cross-cultural replication to map its true applicability.

In conclusion, by investigating the comparative effectiveness and durability of two competing pre-class pedagogical designs, this study addressed a critical gap in the FCM literature. The convergent findings demonstrated that the explicit, linguistically-focused model was associated with significantly greater and more durable gains in oral proficiency than the employed implicit and traditional approaches. This enhanced, sustained success appeared to be linked to a pedagogical architecture that integrated front-loaded linguistic knowledge with structured rehearsal, which systematically prepared the learners for complex in-class tasks. Consequently, the results suggest that explicit, practice-driven linguistic instruction is a key factor in achieving lasting proficiency—a conclusion that aligns with SAT and highlights pedagogical design as a significant variable in the model's success.

This study's primary practical recommendation is for instructors to implement pre-class, form-focused linguistic scaffolding through a sequence of declarative instruction, controlled practice, and constrained production. Supported by formative assessment, this approach optimizes learning while shifting the instructor's role from content curator to competence architect, ensuring learners arrive prepared for complex in-class communicative tasks. At the curricular level, implementation requires formalizing these pre-class modules as a core, assessed component of the syllabus. This necessitates leveraging interactive learning platforms over passive ones and providing robust teacher training in both the design of pre-class scaffolds and the facilitation of in-class communication to fully realize the model's potential.

Notwithstanding its contributions, this study's findings must be interpreted in light of several limitations, which in turn suggest specific directions for future research. First, the findings should be interpreted with caution due to the relatively modest sample size (N=73) and the fact that the participants were recruited from a single Iranian EFL academic institution. While sufficient for detecting the large effect sizes reported, the sample was likely underpowered for more subtle group differences—a practical constraint of using intact classes. As discussed earlier, This context-specificity limits generalizability, underscoring the need for replication studies with larger, more diverse cohorts across varied linguistic and cultural backgrounds, learning environments (EFL vs. ESL), and proficiency levels to establish broader validity.

Second, the assessment of learning durability was limited to a single delayed posttest administered three weeks after the intervention. Future longitudinal research should employ multi-point delayed posttests over a more extended period. This would clarify the trajectory of skill retention versus decay and provide more definitive insights into the long-term efficacy of the LFPCI model. Finally, the study's quasi-experimental design invites a cautious, correlational interpretation of the findings. The observed outcomes could have been influenced by confounding factors, including unmeasured learner differences (e.g., cognitive styles, motivation, and self-regulation) or a novelty effect. The study's scope was also limited to speaking, restricting the generalizability of the findings to other skills. Future research should therefore employ randomized controlled trials to establish causality and systematically investigate the mediating role of learner variables across diverse educational and cultural contexts. It should also explore the model's potential for enhancing other language skills, such as writing and listening.

Declaration of Competing Interest

The author reports no declarations of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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