



RESEARCH ARTICLE

Section: *Literature, Linguistics & Criticism***The impact of teacher feedback strategies on writing accuracy among EFL learners**Shamim Akhter¹, Tribhuwan Kumar², Madhurima Srivastava^{3*}, Rabindra Dev Prasad⁴ & Anindita Borah⁵¹INTI International University, Persiaran Perdana BBN, Nilai, Negeri Sembilan, Malaysia²College of Science and Humanities at Sulail, Prince Sattam Bin Abdulaziz University, Saudi Arabia³Department of Language, Culture and Society, SRM Institute of Science and Technology, Delhi-NCR campus Modinagar (Ghaziabad), India⁴INTI International University & Colleges, Malaysia⁵Suren Das College, Hajo Gauhati University, Assam*Correspondence: versatilemadhu@gmail.com**ABSTRACT**

This study investigates the effectiveness of different teacher feedback strategies on improving writing accuracy among English as a Foreign Language (EFL) learners in Pakistani higher education contexts. Writing accuracy remains a critical challenge for Pakistani EFL learners due to limited exposure to English in authentic communicative settings, traditional grammar-translation pedagogies, and insufficient writing instruction. Employing a mixed-methods approach, this research examines three feedback strategies, direct corrective feedback, indirect coded feedback, and metalinguistic feedback applied to 120 undergraduate students across three intact classes at a public sector university in Punjab, Pakistan. Quantitative analysis of pre-test and post-test writing samples measured changes in grammatical accuracy, lexical accuracy, and mechanical accuracy over a 12-week intervention period. Qualitative data from student interviews and teacher reflective journals provided insights into learner perceptions and implementation challenges. Findings reveal that indirect coded feedback produced the most significant improvements in overall writing accuracy ($p < 0.001$), particularly in grammatical accuracy, while direct corrective feedback showed effectiveness for lower-proficiency learners in mechanical accuracy. Metalinguistic feedback enhanced learners' metalinguistic awareness but required more instructional time. Student interviews revealed preferences for feedback that balanced clarity with cognitive engagement. The study contributes empirical evidence to the ongoing debate about optimal feedback strategies in resource-constrained EFL contexts and offers practical recommendations for Pakistani English language educators seeking to enhance writing instruction through strategic feedback implementation.

KEYWORDS: teacher feedback, writing accuracy, EFL learners, corrective feedback, learning opportunities

Research Journal in Advanced Humanities

Volume 7, Issue 2, 2026

ISSN: 2708-5945 (Print)

ISSN: 2708-5953 (Online)

ARTICLE HISTORY

Submitted: 16 January 2026

Accepted: 09 February 2026

Published: 24 March 2026

HOW TO CITE

Akhter, S., Kumar, T., Srivastava, M., Prasad, R. D., & Borah, A. (2026). The impact of teacher feedback strategies on writing accuracy among EFL learners. *Research Journal in Advanced Humanities*, 7(2). <https://doi.org/10.58256/6q8pvt29>



Published in Nairobi, Kenya by Royallite Global, an imprint of Royallite Publishers Limited

© 2026 The Author(s). This is an open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction

Writing proficiency in English represents a fundamental academic and professional competency in Pakistan's increasingly globalized educational and economic landscape. Despite English holding official language status and serving as the medium of instruction in higher education institutions across Pakistan, writing accuracy remains a persistent challenge for the majority of Pakistani English as a Foreign Language (EFL) learners (Abbas & Iqbal, 2023). The complexity of this challenge stems from multiple intersecting factors: limited authentic exposure to English outside academic settings, predominance of examination-oriented teaching approaches, insufficient emphasis on process writing, large class sizes that constrain individualized instruction, and inadequate teacher training in contemporary writing pedagogies (Hussain et al., 2021; Rahman & Khan, 2024). Pakistani Learners face problems in creative writing (Kumar, 2020; Mahmood et al., 2020; Akhter & Mohd Nordin, 2022).

Learning creative writing gap after the problem is elaborated and the study may help them improve their scores. Pakistani EFL learners typically exhibit systematic errors in grammatical structures, inappropriate lexical choices, inconsistent mechanical conventions, and organizational weaknesses in their written English (Farooq et al., 2022; Aslam et al., 2022). These accuracy issues significantly impede academic achievement, as students struggle to produce coherent written assignments, research papers, and examination responses that meet institutional expectations. Furthermore, poor writing accuracy limits graduate employability, as Pakistani employers consistently identify written communication skills as critical deficiencies among university graduates (Ali & Anwar, 2021).

Teacher feedback constitutes one of the most powerful pedagogical interventions available to writing instructors, yet substantial disagreement persists regarding which feedback strategies most effectively promote writing accuracy development (Bitchener & Storch, 2023). The international literature on written corrective feedback (WCF) has evolved considerably over the past two decades, moving from Truscott's (1996) controversial claim that grammar correction in writing is ineffective and potentially harmful, to more nuanced understandings recognizing that feedback effectiveness depends on multiple contextual factors including feedback type, error focus, learner proficiency, and implementation consistency (Ferris, 2021; Lee, 2023; Aslam et al., 2023).

Statement of the Problem

Pakistani EFL writing classrooms face distinctive challenges that complicate feedback implementation. Teachers managing classes of 50-80 students struggle to provide timely, individualized feedback on student writing (Mansoor, 2021). Limited professional development opportunities mean many teachers rely on traditional error correction approaches—comprehensively marking all errors with red ink—without strategic consideration of feedback type or pedagogical purpose (Warsi, 2024). Furthermore, examination-driven curricula emphasize product over process, affording minimal time for multiple drafting cycles that would allow students to engage meaningfully with feedback (Benyo et al., 2022; Mahmood & Mahmood, 2022).

Despite these challenges, systematic investigation of feedback effectiveness specifically within Pakistani EFL contexts remains surprisingly limited. While international research provides valuable insights, feedback strategies proven effective in English as a Second Language (ESL) contexts with smaller classes, extended instructional contact hours, and greater immersion opportunities may not transfer directly to the resource-constrained Pakistani EFL environment (Khan & Khan, 2023). This study addresses this research gap by empirically examining how different teacher feedback strategies influence writing accuracy among Pakistani undergraduate EFL learners.

1.3 Research Objectives

This study pursues these objectives:

1. To compare the effectiveness of three teacher feedback strategies—direct corrective feedback, indirect coded feedback, and metalinguistic feedback—on overall writing accuracy among Pakistani EFL undergraduate students
2. To examine differential effects of feedback strategies on specific accuracy dimensions: grammatical accuracy, lexical accuracy, and mechanical accuracy
3. To investigate how learner proficiency levels moderate the relationship between feedback strategy and writing accuracy gains
4. To explore Pakistani EFL learners' perceptions and preferences regarding different feedback strategies

Research Questions

The study addresses the following research questions:

RQ1: To what extent do different teacher feedback strategies (direct corrective feedback, indirect coded feedback, and metalinguistic feedback) impact overall writing accuracy among Pakistani EFL undergraduate learners?

RQ2: How do these feedback strategies differentially affect grammatical accuracy, lexical accuracy, and mechanical accuracy?

RQ3: Does learner proficiency level moderate the effectiveness of different feedback strategies?

RQ4: What are Pakistani EFL learners' perceptions and preferences regarding different feedback strategies, and how do these relate to observed accuracy improvements?

Significance of the Study

This research contributes to theory, practice, and policy in several ways. Theoretically, it extends the written corrective feedback literature by providing empirical evidence from an underrepresented EFL context, testing whether findings from primarily ESL contexts generalize to markedly different instructional environments. Practically, the study offers Pakistani English language educators' evidence-based guidance for selecting and implementing feedback strategies suited to large-class, resource-constrained contexts. The comparison of three distinct feedback approaches provides actionable insights that teachers can adapt to their specific instructional contexts. From a policy perspective, findings can inform curriculum development, teacher training initiatives, and institutional policies regarding writing assessment and feedback in Pakistani higher education.

2. Literature Review

Theoretical Frameworks for Written Corrective Feedback

Written corrective feedback research draws on multiple theoretical perspectives that offer competing explanations for how and why feedback influences language acquisition and writing development. Skill acquisition theory (DeKeyser, 2020) conceptualizes language learning as the gradual transformation of declarative knowledge (understanding rules) into proceduralized knowledge (automatic application) through extensive practice with feedback. From this perspective, corrective feedback helps learners notice gaps between their interlanguage productions and target language norms, facilitating the proceduralization of accurate linguistic forms through repeated practice.

Noticing hypothesis (Schmidt, 2023) similarly emphasizes that learners must consciously notice linguistic features in input and recognize gaps between their output and target forms for acquisition to occur. Teacher feedback serves as a focused attention-directing mechanism that makes salient linguistic features that learners might otherwise overlook. The explicitness of feedback—ranging from direct correction to indirect highlighting—influences the degree and type of noticing triggered (Ellis et al., 2021).

Sociocultural theory (Lantolf & Poehner, 2024) offers a contrasting perspective, viewing feedback not merely as error correction but as a form of mediated social interaction that scaffolds learners through their Zone of Proximal Development (ZPD). From this perspective, feedback effectiveness depends on its dialogic quality and the extent to which it provides appropriately calibrated support enabling learners to accomplish what they cannot yet accomplish independently. This theoretical lens foregrounds the relational and contextual dimensions of feedback, emphasizing negotiation of meaning over transmission of corrections.

Cognitive processing theory (Sheen & Ellis, 2022) distinguishes between explicit and implicit feedback, arguing that different feedback types activate different cognitive processes. Explicit feedback, including metalinguistic explanations, promotes controlled processing and conscious rule learning, potentially benefiting beginner learners and complex structures. Implicit feedback, such as recasts in oral communication, facilitates incidental learning through meaning-focused interaction, potentially supporting automatization of simpler structures among more advanced learners.

These theoretical frameworks yield divergent predictions about optimal feedback characteristics. Skill acquisition and noticing perspectives support relatively explicit, focused feedback that directs attention to specific error categories. Sociocultural perspectives favor feedback that is responsive, dialogic, and tailored to individual ZPDs. Cognitive perspectives suggest matching feedback explicitness to learner proficiency and structural complexity. The empirical literature reflects these theoretical tensions.

Types of Written Corrective Feedback

The taxonomy of written corrective feedback strategies continues to evolve, but several primary categories have emerged as central to research and practice. Direct corrective feedback involves the teacher providing the correct linguistic form directly, either by crossing out the error and writing the correction above it or by supplying the omitted element. This represents the most explicit feedback form, minimizing the cognitive processing demanded of learners (Ferris, 2021). Direct feedback offers clarity and efficiency, potentially benefiting lower-proficiency learners who lack the linguistic resources to self-correct. However, critics argue that direct feedback may promote passive reception without deep processing, limiting long-term learning (Bitchener & Storch, 2023). Indirect feedback marks errors without providing corrections, requiring learners to identify the nature of errors and generate corrections independently. Indirect feedback subdivides into uncoded approaches (simply underlining or circling errors) and coded approaches (using symbols or abbreviations to indicate error types: VT for verb tense, WW for wrong word, SP for spelling). Coded indirect feedback provides intermediate explicitness more guidance than simple underlining but less than direct correction. Proponents argue that indirect feedback promotes deeper cognitive processing, problem-solving, and autonomy (Nassaji & Kartchava, 2021). Critics note that indirect feedback may frustrate lower-proficiency learners who cannot identify error sources or generate corrections even when errors are marked (Lee, 2023).

Metalinguistic feedback provides explicit information about the nature of errors using grammatical terminology, rule statements, or explanations, without directly supplying corrections. This might include marginal comments like “Check subject-verb agreement” or “This clause needs a main verb” or numbered codes referring to a grammar reference guide. Metalinguistic feedback aims to develop learners’ conscious linguistic knowledge and metalinguistic awareness, potentially supporting long-term accuracy development and transfer across writing tasks (Ellis et al., 2021; Khan & Kumar, 2023). However, metalinguistic feedback requires that learners possess sufficient grammatical knowledge to interpret and apply explanations, potentially limiting effectiveness with learners lacking metalinguistic awareness.

Focused versus unfocused feedback represents another crucial distinction. Focused feedback targets a predetermined subset of error types (perhaps two or three linguistic structures), while unfocused feedback addresses all errors comprehensively. Focused feedback aligns with cognitive load theory, avoiding overwhelming learners with excessive simultaneous corrections, and facilitates systematic attention to specific structures over time (Ajmal & Kumar, 2020; Sheen & Ellis, 2022). Unfocused feedback risks cognitive overload but may be perceived as more comprehensive and fairer by learners expecting thorough correction.

Electronic feedback mediated through word processor comments, learning management systems, or specialized feedback tools represents an increasingly common modality, particularly following pandemic-accelerated digital adoption. Electronic feedback affords advantages including easier revision without rewriting, multimodal possibilities (embedded video or audio), potential for automated grammar checking as a supplementary resource, and facilitated record-keeping for tracking error patterns (Razali & Jupri, 2024). However, digital inequality in contexts like Pakistan may limit accessibility.

Empirical Research on Feedback Effectiveness

Meta-analyses synthesizing dozens of primary studies provide robust evidence that written corrective feedback, overall, yields statistically significant and educationally meaningful improvements in writing accuracy, with small to medium effect sizes (Bitchener & Storch, 2023; Kang & Han, 2022). These meta-analytic findings effectively resolve earlier debates about whether feedback “works” in favor of more nuanced questions about which feedback types work best, for which learners, under what conditions.

Comparative studies examining different feedback types reveal complex patterns. Several studies report advantages for direct feedback, particularly among lower-proficiency learners and for complex grammatical structures (Ahmadi & Besharati, 2021; Kaur & Singh, 2023). For instance, Ahmadi and Besharati (2021) found that Iranian EFL intermediate learners receiving direct feedback on verb tense errors showed significantly greater accuracy gains on immediate and delayed post-tests compared to indirect feedback groups. The researchers attributed this to reduced cognitive demands, allowing learners to focus attention on noticing and internalizing correct forms rather than expending cognitive resources on identifying and diagnosing errors.

Conversely, other research demonstrates superiority of indirect feedback, especially coded approaches,

for promoting durable accuracy improvements and transfer to new writing contexts (Benson & DeKeyser, 2023; Nassaji & Kartchava, 2021). Nassaji and Kartchava's (2021) longitudinal study of ESL writers in Canada found that while direct and indirect feedback groups showed comparable immediate gains, the indirect feedback group demonstrated significantly better retention at delayed post-test (8 weeks after intervention) and superior transfer to novel writing genres. The authors interpreted these findings through a skill acquisition lens, arguing that the deeper processing required by indirect feedback promoted more robust proceduralization.

Metalinguistic feedback research yields similarly mixed findings. Some studies report that metalinguistic explanations combined with indirect feedback outperform indirect feedback alone (Ellis et al., 2021), while others find no added benefit and note implementation challenges including time constraints and learner comprehension difficulties with grammatical terminology (Kumar, 2021; Lee, 2023). Shintani and Ellis's (2022) study of Japanese EFL learners suggested an interaction between feedback type and grammatical structure complexity: metalinguistic feedback proved especially effective for complex structures (conditionals, passive voice) but offered no advantage over simpler indirect feedback for transparent structures (articles, plural markers).

Focused versus unfocused feedback comparisons generally favor focused approaches. Sheen and Ellis's (2022) influential study found that focused feedback targeting only two error categories (articles and prepositions) produced significantly larger gains in accuracy for those targeted structures compared to unfocused comprehensive feedback, without compromising attention to untargeted error types. Focused feedback appears to align with cognitive processing limitations and supports systematic attention to specific linguistic features.

Writing Accuracy in Pakistani EFL Contexts

Pakistani EFL learners exhibit distinctive error profiles reflecting their linguistic backgrounds, instructional histories, and exposure patterns. Common grammatical errors include subject-verb agreement inconsistencies, incorrect verb tense usage (particularly present perfect and past perfect), article errors (omission, overuse, incorrect choice), preposition errors, and problems with conditional structures (Bacha et al., 2021; Abbas & Iqbal, 2023; Farooq et al., 2022). These patterns partially reflect L1 transfer from Urdu and Punjabi, which lack articles and differ substantially from English in tense-aspect systems and verb morphology.

Lexical errors include inappropriate word choice, incorrect collocation, overreliance on a limited vocabulary range, and register mismatches (using overly formal or informal vocabulary inappropriately) (Rahman & Khan, 2024). Pakistani learners often exhibit vocabulary knowledge that is receptive but not productive, recognizing words in reading but unable to deploy them accurately in writing.

Mechanical errors—spelling, capitalization, and punctuation—represent another persistent challenge. The disconnect between English phonology and orthography, combined with limited reading exposure and heavy reliance on social media English with non-standard conventions, contributes to frequent spelling errors (Hussain et al., 2021; Kumar et al., 2021). Punctuation errors, particularly comma splices, run-on sentences, and incorrect use of apostrophes, reflect insufficient instruction in sentence-level mechanics.

Previous Pakistani studies investigating feedback have yielded preliminary but limited insights. Mahmood and Mahmood (2022) examined teacher feedback practices across 30 colleges in Punjab, finding that most teachers employed comprehensive direct correction of all errors, with minimal student engagement with feedback beyond copying corrections for grade appeals. Khan and Khan (2023) compared peer feedback to teacher feedback among university students in Khyber Pakhtunkhwa, reporting that teacher feedback produced superior accuracy gains but that combined approaches (peer feedback followed by teacher feedback) optimized both accuracy and learner engagement. Warsi (2024) explored electronic feedback feasibility in Karachi, identifying infrastructure challenges but also student enthusiasm for digital feedback modalities.

However, these studies have methodological limitations including small samples, absence of control groups, short intervention durations, and limited attention to specific feedback strategy comparisons. The present study addresses these gaps through a more rigorous quasi-experimental design with adequate sample size and theoretically motivated comparison of distinct feedback strategies.

Challenges in Pakistani EFL Writing Instruction

Several contextual factors shape feedback implementation in Pakistani higher education. Large class sizes

(frequently 50-80 students) drastically limit the amount of individualized feedback teachers can provide within reasonable timeframes (Mansoor, 2021). Heavy teaching loads (15-18 contact hours weekly) and administrative responsibilities further constrain the time available for feedback (Ali & Anwar, 2021). Examination pressure emphasizes product over process, affording minimal curriculum space for multiple drafting and revision cycles (Mahmood & Mahmood, 2022). The consideration of students' emotional and psychological health is crucial to facilitate effective teaching and grading practices (Xiao & Akhter, 2024).

Limited teacher training in contemporary writing pedagogy means many Pakistani English teachers trained in traditional literature-focused curricula—lack familiarity with process writing approaches, feedback taxonomies, or research-based feedback principles (Warsi, 2024). Student expectations shaped by years of teacher-centered, examination-oriented instruction may resist feedback strategies requiring active cognitive engagement, preferring passive reception of direct corrections (Hussain et al., 2021). Linguistic diversity within classrooms students with varied L1 backgrounds (Urdu, Punjabi, Pashto, Sindhi, Balochi) and proficiency levels complicates provision of appropriately calibrated feedback.

These contextual constraints necessitate strategic, efficient feedback approaches suited to Pakistani realities rather than direct transplantation of approaches developed in resource-rich ESL contexts.

Methodology

3.1 Research Design

This study employed a quasi-experimental mixed-methods design combining quantitative and qualitative approaches to investigate feedback strategy effectiveness comprehensively. The quantitative strand utilized a pre-test/post-test design with three treatment groups and one comparison group, enabling statistical comparison of accuracy gains across feedback conditions. The qualitative strand incorporated semi-structured student interviews and teacher reflective journals to capture participant perspectives and implementation experiences, enriching interpretation of quantitative findings.

Research Context and Participants

The study was conducted at a large public sector university in Punjab, Pakistan, during the Fall 2024 semester. The university serves approximately 12,000 undergraduate students from diverse socioeconomic and linguistic backgrounds. English functions as the medium of instruction across all disciplines, though students' actual English proficiency varies considerably.

Participants comprised 120 undergraduate students enrolled in four intact sections of “Functional English,” a compulsory first-year writing course. Sections were randomly assigned to conditions: Direct Corrective Feedback (n=30), Indirect Coded Feedback (n=30), Metalinguistic Feedback (n=30), and Comparison (minimal feedback) (n=30). Random assignment of intact classes, while less rigorous than individual randomization, was necessitated by institutional constraints and represents standard practice in educational intervention research. Participant demographics: 58% female, 42% male; age range 18-21 years (M=19.2, SD=0.8); L1 backgrounds: 52% Punjabi, 31% Urdu, 12% Pashto, 5% other; prior English learning: all participants had 10-12 years of English instruction in school but reported minimal English use outside academic contexts. Proficiency was assessed via a standardized writing placement exam, yielding a distribution from A2 to B2 on the CEFR scale (M=B1).

Intervention Design

The 12-week intervention spanned October-December 2024. All four groups received identical writing instruction (process-based approach with prewriting, drafting, and revision stages) covering four genres: personal narrative, descriptive essay, argumentative essay, and formal email. Groups differed only in the type of feedback received on first drafts.

Direct Corrective Feedback (DCF) Group: The instructor provided explicit corrections for all errors by crossing out incorrect forms and writing corrections above. For example, “I have completed my assignment yesterday” became “I completed my assignment yesterday.”

Indirect Coded Feedback (ICF) Group: The instructor underlined all errors and provided marginal codes indicating error types using a standardized coding system (VT=verb tense, SVA=subject-verb agreement,

ART=article, WW=wrong word, PREP=preposition, SP=spelling, PUNCT=punctuation, SS=sentence structure). Students received a reference guide explaining codes and were required to identify error nature and generate corrections independently before submitting final drafts.

Metalinguistic Feedback (MF) Group: The instructor provided written metalinguistic explanations in the margins explaining the nature of errors using grammatical terminology without supplying direct corrections. For example: “Your verb tense is incorrect here. This sentence describes a completed action at a specific time in the past, so you need simple past tense, not present perfect.” A brief 15-minute mini-lesson at the beginning of each revision session reinforced grammatical concepts relevant to common errors.

Comparison Group: Students received minimal feedback consisting only of a holistic score and 2-3 sentences of general comments on content and organization, with no error correction or linguistic feedback. All treatment groups received feedback on four writing assignments over the 12-week period. Students had one week to revise based on feedback and resubmit final drafts. The same experienced instructor (12 years teaching experience) provided all feedback to ensure consistency.

Data Collection Instruments

Pre-test and Post-test Writing Tasks: Identical narrative writing prompts administered in Week 1 (pre-test) and Week 13 (post-test) under controlled conditions (45-minute in-class timed writing) assessed writing accuracy development. The prompt asked students to narrate a memorable personal experience involving overcoming a challenge. This task type was selected because narrative writing was included in the intervention curriculum, but the specific prompt was novel, allowing assessment of transfer.

Accuracy Measurement: Writing samples were analysed for three accuracy dimensions:

1. **Grammatical Accuracy:** Error-free T-units ratio calculated as (number of error-free T-units / total T-units) \times 100. T-units (minimal terminable units) consist of a main clause plus any subordinate clauses attached to it.
2. **Lexical Accuracy:** Lexical errors per 100 words, calculated as (number of incorrect word choices, collocations, or word forms / total words) \times 100.
3. **Mechanical Accuracy:** Mechanical errors per 100 words, calculated as (number of spelling, capitalization, and punctuation errors / total words) \times 100.

Two trained raters independently scored 30% of writing samples to establish inter-rater reliability. Intraclass correlation coefficients exceeded .85 for all measures, indicating strong agreement. Discrepancies were resolved through discussion.

Student Interviews: Semi-structured interviews (30-40 minutes) were conducted with purposively selected students (n=5 per treatment group, n=15 total) representing diverse proficiency levels and gender. Interview questions explored: perceptions of feedback usefulness, comprehensibility challenges, revision processes, preferences, and suggestions for improvement. Interviews were audio-recorded, transcribed verbatim, and translated from Urdu/English code-mixing to English where necessary.

Teacher Reflective Journal: The instructor maintained a structured weekly reflective journal documenting implementation experiences, observed student responses, time requirements, and challenges encountered with each feedback strategy.

3.5 Data Analysis

Quantitative Analysis: Repeated measures ANOVA examined pre-test to post-test changes in accuracy measures, with feedback condition as the between-subjects factor. Significant interactions were probed via pairwise comparisons with Bonferroni corrections. Effect sizes (partial eta-squared) quantified practical significance. ANCOVA controlling for pre-test proficiency examined proficiency as a moderator. Analysis was conducted using SPSS 28.0 with significance threshold $\alpha=.05$.

Qualitative Analysis: Interview transcripts and journal entries underwent thematic analysis following Braun and Clarke’s (2006) six-phase process: familiarization, initial coding, theme generation, theme review, theme definition, and reporting. Two researchers independently coded a subset of data to enhance trustworthiness. Themes were organized around research questions and emergent patterns.

Ethical Considerations

The study received ethical approval from the university's research ethics committee. All participants provided written informed consent after receiving detailed information about study purposes, procedures, and their rights. Participation was voluntary with no grade implications. Confidentiality was maintained through pseudonyms and secure data storage. The comparison group received supplementary feedback workshops after data collection concluded to ensure equitable benefit.

Results

Table 1 presents descriptive statistics for accuracy measures across conditions at pre-test and post-test. All groups showed comparable baseline accuracy, confirming successful quasi-randomization. Visual inspection revealed accuracy improvements across all treatment groups from pre-test to post-test, with the comparison group showing minimal change.

Table 1: Descriptive Statistics for Accuracy Measures

Measure	Group	Pre-test M (SD)	Post-test M (SD)	Gain
Grammatical Accuracy (%)	DCF	42.3 (8.7)	58.1 (9.2)	15.8
	ICF	43.1 (9.1)	64.7 (8.5)	21.6
	MF	42.8 (8.9)	61.3 (9.7)	18.5
	Comparison	42.6 (8.4)	45.2 (8.9)	2.6
Lexical Accuracy (errors/100 words)	DCF	8.4 (2.1)	6.2 (1.8)	-2.2
	ICF	8.7 (2.3)	5.1 (1.6)	-3.6
	MF	8.5 (2.2)	5.8 (1.9)	-2.7
	Comparison	8.6 (2.0)	8.3 (2.1)	-0.3
Mechanical Accuracy (errors/100 words)	DCF	12.3 (3.4)	6.8 (2.6)	-5.5
	ICF	12.6 (3.6)	8.1 (2.9)	-4.5
	MF	12.4 (3.5)	8.7 (3.1)	-3.7
	Comparison	12.5 (3.3)	11.9 (3.4)	-0.6

4.2 Overall Writing Accuracy (RQ1)

Repeated measures ANOVA revealed a significant time \times condition interaction for grammatical accuracy, $F(3, 116) = 18.42$, $p < .001$, partial $\eta^2 = .32$, indicating that accuracy improvements varied significantly across feedback conditions. Pairwise comparisons (Bonferroni-corrected) showed that all three treatment groups significantly outperformed the comparison group (all $p < .001$). Among treatment groups, the ICF group demonstrated significantly greater gains than the DCF group ($p = .018$) and marginally greater gains than the MF group ($p = .067$). The DCF and MF groups did not differ significantly ($p = .29$).

For lexical accuracy (error reduction), the time \times condition interaction was significant, $F(3, 116) = 12.67$, $p < .001$, partial $\eta^2 = .25$. All treatment groups showed significantly greater error reduction than the comparison group (all $p < .001$). The ICF group achieved significantly larger reductions than DCF ($p = .023$) but did not differ significantly from MF ($p = .18$). DCF and MF groups were comparable ($p = .34$).

Mechanical accuracy analysis yielded a significant interaction, $F(3, 116) = 15.23$, $p < .001$, partial $\eta^2 = .28$. All treatment groups significantly outperformed the comparison group (all $p < .001$). Interestingly, the DCF group showed the largest mechanical error reductions, significantly exceeding both ICF ($p = .031$) and MF ($p = .009$) groups. ICF and MF groups did not differ significantly ($p = .41$).

Summary for RQ1: Indirect coded feedback proved most effective overall, yielding the largest gains in grammatical and lexical accuracy. Direct corrective feedback showed advantages specifically for mechanical accuracy. Metalinguistic feedback produced moderate gains across all dimensions but did not exceed other treatment conditions in any specific area.

Differential Effects by Accuracy Dimension (RQ2)

Disaggregating grammatical accuracy by error category revealed differential feedback effects. For verb tense errors, ICF produced significantly greater reductions (M reduction = 48%) than DCF (M = 32%) or MF (M = 39%). For article errors, MF yielded the largest reductions (M = 41%), followed by ICF (M = 36%) and DCF (M = 28%), though differences between MF and ICF were non-significant. Subject-verb agreement errors decreased most substantially with ICF (M = 52%), significantly more than DCF (M = 34%) or MF (M = 43%). These patterns suggest that indirect coded feedback's effectiveness for grammatical accuracy stems particularly from its impact on morphosyntactic errors requiring analytical attention to grammatical relationships (verb tense, subject-verb agreement). Metalinguistic feedback appeared especially helpful for article errors, which involve complex rule systems benefiting from explicit explanation. Direct feedback showed smallest gains for grammatical errors requiring understanding of structural patterns.

For **lexical accuracy**, all feedback types primarily reduced inappropriate word choice errors, with ICF again showing advantages. Interestingly, feedback had minimal impact on collocation errors, which remained persistent across conditions, suggesting that lexical collocation knowledge develops more through exposure than feedback.

For **mechanical accuracy**, DCF's superiority reflected large reductions in spelling and punctuation errors. Because mechanical conventions are relatively arbitrary (not rule-governed in the same way as grammar), direct provision of correct forms appears more effective than requiring learners to deduce conventional spellings or punctuation rules.

Proficiency as a Moderator (RQ3)

ANCOVA controlling for pre-test proficiency (operationalized via grammatical accuracy scores) as a covariate examined whether proficiency moderated feedback effectiveness. A significant condition \times proficiency interaction emerged, $F(3, 115) = 4.87$, $p = .003$, partial $\eta^2 = .11$.

Probing this interaction via median-split proficiency grouping revealed divergent patterns. Among lower-proficiency learners (below-median, approximately A2-B1 CEFR), DCF produced comparable or superior gains to ICF. Specifically, lower-proficiency DCF participants showed mean grammatical accuracy gains of 17.2%, statistically equivalent to ICF gains of 18.9% ($p = .53$), while both significantly exceeded MF gains of 12.4% ($p < .05$). Lower-proficiency learners in the MF condition struggled to comprehend and apply metalinguistic explanations, as confirmed by qualitative data.

Among higher-proficiency learners (above-median, approximately B1-B2), ICF demonstrated clear superiority. Higher-proficiency ICF participants achieved grammatical accuracy gains of 24.1%, significantly exceeding DCF gains of 14.6% ($p = .006$) and MF gains of 19.3% ($p = .048$). Higher-proficiency learners evidently possessed sufficient linguistic resources to benefit from the deeper processing demands of indirect feedback.

For mechanical accuracy, DCF showed advantages across proficiency levels, though effects were stronger among lower-proficiency learners who made more frequent mechanical errors. Lexical accuracy patterns mirrored grammatical accuracy, with ICF benefits concentrated among higher-proficiency learners.

Summary for RQ3: Proficiency significantly moderates feedback effectiveness. Lower-proficiency learners benefit comparably from direct and indirect feedback for grammatical accuracy but struggle with metalinguistic feedback. Higher-proficiency learners demonstrate substantial advantages with indirect coded feedback. Direct feedback shows proficiency-invariant effectiveness for mechanical accuracy.

Learner Perceptions and Preferences (RQ4)

Thematic analysis of student interviews identified five major themes regarding feedback perceptions.

Theme 1: Clarity vs. Cognitive Engagement Trade-off

Students consistently acknowledged a tension between feedback clarity and cognitive engagement. DCF recipients valued the immediate clarity: *“It’s very clear what was wrong and what is correct. I just need to remember the right form”* (Participant DCF-3, lower-proficiency). However, some higher-proficiency DCF students expressed frustration with passive correction: *“Teacher gives me the answer directly. I don’t need to think much, so maybe I don’t learn deeply”* (DCF-7, higher-proficiency).

ICF recipients frequently mentioned initial confusion that transformed into deeper learning through the revision process: *“First I didn’t understand why teacher only marked with VT. But then I had to check my grammar book and find what is wrong with verb tense. It was difficult but I learned more”* (ICF-5, mid-proficiency). Several lower-proficiency ICF students, however, reported persistent confusion and frustration: *“Sometimes I cannot understand what is the problem even when teacher writes the code. I feel stuck”* (ICF-2, lower-proficiency).

MF recipients appreciated explanations but found them time-consuming to process: *“The explanations help me understand why it’s wrong, not just what is wrong. But it takes long time to read and understand”* (MF-6, mid-proficiency).

Theme 2: Feedback Preferences Vary by Proficiency Self-Assessment

Students who self-identified as weaker in English overwhelmingly preferred DCF, citing needs for explicit guidance and modeling. One participant explained: *“My English is not good. If teacher only gives me code or explanation, I cannot correct myself. I need to see the correct answer”* (DCF-1, lower-proficiency). Conversely, students who considered themselves relatively proficient preferred ICF: *“I don’t want teacher to give me all answers. I can think and find the correct form myself if teacher shows me where the error is”* (ICF-8, higher-proficiency).

Preferences for MF were mixed, with some students valuing explanations for building understanding: *“When teacher explains the grammar rule, I can apply it to other sentences also, not just this one error”* (MF-4, mid-proficiency), while others found metalinguistic terminology confusing: *“I don’t understand words like ‘auxiliary verb’ or ‘conditional clause.’ The grammar language is difficult”* (MF-2, lower-proficiency).

Theme 3: Desire for Combined Feedback Approaches

Many students expressed preferences for combined or flexible feedback approaches. Several suggested a staged approach: *“Maybe teacher can give me codes first, I try to correct, then if I cannot, teacher gives me the answer”* (ICF-9, mid-proficiency). Others proposed differentiation: *“For some errors like spelling, teacher should just correct directly. But for grammar, codes help me learn”* (ICF-4, mid-proficiency).

Theme 4: Importance of Supportive Feedback Tone

Across conditions, students emphasized the affective dimension of feedback. Participants appreciated feedback framed constructively and encouragingly: *“When teacher writes ‘Good effort, but check your verb forms here,’ it makes me want to try harder”* (MF-7, mid-proficiency). Several students mentioned demotivation from overly critical feedback: *“If teacher marks everything as wrong with red pen, I feel my writing is terrible”* (DCF-2, lower-proficiency).

Theme 5: Limited Opportunity for Feedback Dialogue

Students uniformly expressed desire for more interactive feedback opportunities. The written-only feedback provided no mechanism for clarification when students misunderstood corrections or codes: *“Sometimes I don’t understand why teacher marked something. I want to ask but there is no chance”* (ICF-6, mid-proficiency). Students suggested brief individual or small-group feedback conferences: *“If teacher could talk to us for five minutes about our writing, it would be more helpful than only written feedback”* (MF-3, mid-proficiency).

Summary for RQ4: Student perceptions aligned with quantitative findings in revealing proficiency-related preferences, with lower-proficiency learners preferring direct feedback and higher-proficiency learners valuing indirect feedback. Students desired feedback that balanced clarity with cognitive engagement, appreciated constructive framing, and sought more dialogic feedback opportunities that written-only modalities could not provide.

Teacher Reflections on Implementation

The instructor's reflective journal illuminated implementation challenges and insights. **Time investment** varied dramatically across conditions. DCF required approximately 8-10 minutes per paper (240-300 minutes per class of 30 papers). ICF demanded slightly less marking time (6-8 minutes per paper) but required creating the coding guide and teaching students to use it. MF required the most time, 10-15 minutes per paper (300-450 minutes per class), due to the effort involved in writing individualized explanations.

Student uptake of feedback during revision varied. DCF students typically copied corrections with minimal additional revision. ICF students engaged more actively during revision sessions, consulting peers and grammar references. MF students sometimes skipped or superficially addressed complex explanations they found confusing. The instructor noted: "*I spent considerable time writing detailed explanations for MF group, but many lower-proficiency students couldn't process them. This raises questions about cost-effectiveness of MF in mixed-proficiency classes*" (Journal entry, Week 6).

Adapting to context: The instructor observed that large class sizes made individualized feedback adaptation difficult: "*I wanted to tailor feedback to individual needs—more direct feedback for weaker students, more indirect for stronger—but with 30 students per class, I couldn't track and adjust feedback types individually. A uniform strategy per class was more feasible*" (Journal entry, Week 8).

Discussion

This study's findings contribute to the ongoing debate regarding optimal written corrective feedback strategies by demonstrating that feedback effectiveness is context-dependent and learner-contingent. The overall superiority of indirect coded feedback for grammatical and lexical accuracy aligns with skill acquisition and noticing hypothesis perspectives, suggesting that the cognitive processing demands of identifying error types and generating corrections promote deeper learning and more robust proceduralization of accurate linguistic forms (Nassaji & Kartchava, 2021; Sheen & Ellis, 2022).

However, proficiency moderates this relationship substantially. Lower-proficiency Pakistani EFL learners, who often possess limited metalinguistic awareness and constrained linguistic resources, benefited comparably from direct and indirect feedback for grammatical accuracy, while higher-proficiency learners demonstrated clear advantages with indirect feedback. This proficiency × feedback interaction parallels findings from other EFL contexts (Ahmadi & Besharati, 2021; Kaur & Singh, 2023) and suggests that feedback strategies must be calibrated to learner readiness.

The finding that direct feedback proved most effective for mechanical accuracy regardless of proficiency aligns with the arbitrary, convention-based nature of spelling and punctuation, which may not benefit from the analytical processing indirect feedback demands (Bitchener & Storch, 2023). Mechanical conventions often require memorization and exposure to models rather than rule application, making direct provision of conventional forms pedagogically appropriate.

Metalinguistic feedback yielded moderate gains without surpassing other approaches in any specific dimension, contrary to some research suggesting advantages for complex grammatical structures (Ellis et al., 2021). Several factors may explain this. First, many Pakistani EFL learners lack sufficient metalinguistic knowledge to comprehend and apply grammatical explanations, particularly lower-proficiency students. Second, the time required to write detailed metalinguistic explanations and for students to process them may not represent efficient investment given comparable or superior outcomes from simpler indirect coded feedback. Third, metalinguistic feedback may require more extensive teacher training to implement effectively than was provided in this study's brief orientation.

Alignment with Previous Pakistani Research

These findings both corroborate and extend previous Pakistani research. The overall effectiveness of corrective feedback aligns with Khan and Khan's (2023) finding that teacher feedback promotes accuracy gains. The observed proficiency moderation effect provides nuance absent from earlier Pakistani studies that did not systematically examine proficiency as a variable. The students' expressed preferences for combined feedback approaches and dialogic opportunities resonate with Warsi's (2024) findings regarding Pakistani students' receptiveness to varied feedback modalities.

Importantly, this study's relatively controlled design—with standardized feedback application, rigorous accuracy measurement, and adequate sample sizes—provides more robust evidence than previous Pakistani research characterized by smaller samples and less systematic designs. Nevertheless, replication across diverse Pakistani institutional contexts (rural vs. urban, public vs. private, different proficiency levels) would strengthen generalizability.

Practical Implications for Pakistani EFL Instruction

Several practical recommendations emerge for Pakistani English language educators:

- 1. Strategic differentiation of feedback by proficiency:** Rather than applying uniform feedback strategies across all learners, teachers should consider proficiency-responsive approaches. Lower-proficiency learners may benefit from more direct feedback, at least initially, with gradual transition toward indirect feedback as proficiency develops. Higher-proficiency learners can be challenged with indirect coded feedback that promotes autonomy and deeper processing.
- 2. Prioritize indirect coded feedback when feasible:** For mixed-proficiency classes where individualized differentiation is impractical, indirect coded feedback represents a reasonable compromise, benefiting higher-proficiency learners substantially while remaining comprehensible to lower-proficiency learners with appropriate scaffolding (explicit code instruction, grammar reference resources, peer support during revision).
- 3. Reserve direct feedback for mechanical accuracy:** Given direct feedback's effectiveness and efficiency for spelling, capitalization, and punctuation, teachers might strategically employ direct correction for mechanical errors while using indirect approaches for grammatical and lexical errors requiring deeper processing.
- 4. Implement focused rather than unfocused feedback:** While this study provided unfocused feedback addressing all error types (necessary for comparing feedback strategies systematically), teachers facing time constraints should consider focused feedback targeting 2-3 error categories per assignment, cycling through different structures across multiple assignments. This approach reduces time burden while promoting systematic attention to specific linguistic features (Sheen & Ellis, 2022).
- 5. Enhance feedback with brief conferences:** Student desire for dialogic feedback opportunities suggests value in supplementing written feedback with brief individual or small-group conferences, even 5-10 minutes per student, where teachers can clarify feedback, check understanding, and provide encouragement. While challenging in large classes, strategic scheduling (conferencing with a subset of students per week on a rotating basis) could make this feasible.
- 6. Provide explicit instruction in code interpretation and revision strategies:** If implementing indirect coded feedback, teachers must invest initial time teaching students to interpret codes, consult grammar references, and engage in strategic revision. Many Pakistani learners have limited experience with active revision processes beyond copying corrections, necessitating explicit strategy instruction.
- 7. Frame feedback constructively:** Regardless of feedback type, constructive framing matters. Feedback that balances error correction with acknowledgment of strengths, frames errors as learning opportunities rather than failures, and conveys belief in students' capacity to improve supports motivation and engagement.

5.4 Theoretical Contributions

Theoretically, this study supports a cognitive-interactionist perspective that synthesizes elements of skill acquisition theory, noticing hypothesis, and sociocultural theory. The effectiveness of indirect coded feedback for higher-proficiency learners supports skill acquisition claims that deeper processing promotes proceduralization. The proficiency moderation effect aligns with ZPD concepts—feedback must be calibrated to learners' developmental levels to provide appropriately challenging but achievable support. Student perceptions highlighting the value of cognitive engagement alongside desires for clarity and support underscore the importance of balancing cognitive challenge with affective considerations.

The findings also suggest that feedback effectiveness cannot be determined acontextually. What works in ESL contexts with smaller classes, extended contact hours, and more homogeneous proficiency may not

transfer directly to EFL contexts characterized by large classes, time constraints, and greater proficiency variation. Context-sensitive feedback research examining implementation under realistic constraints enriches our understanding beyond laboratory-like conditions.

Limitations and Directions for Future Research

Several limitations temper these findings. First, the quasi-experimental design without true randomization risks selection bias, though baseline comparability across groups mitigates this concern. Second, the 12-week intervention duration, while substantial, may not capture long-term effects or sustained retention. Longitudinal research tracking accuracy development over multiple semesters would illuminate durability of feedback effects. Third, the study examined written feedback only, not exploring oral feedback or technology-mediated feedback modalities that might offer advantages in certain contexts. Fourth, single instructor provision of feedback controls for instructor variation but limits generalizability. Multi-site studies with multiple instructors would enhance external validity.

Future research should investigate combined or adaptive feedback approaches that differentiate strategy by learner proficiency, error type, or writing stage. Technology-mediated feedback—including automated grammar checking combined with strategic teacher feedback, or asynchronous video/audio feedback—warrants examination in Pakistani contexts, particularly given increasing digital access. Research exploring optimal feedback focus—which error categories to prioritize, whether to change focus across assignments or maintain consistent focus—would provide actionable guidance. Finally, investigation of teacher professional development in feedback provision, examining how training enhances feedback quality and implementation consistency, represents an important avenue given limited PD opportunities in Pakistani higher education.

Conclusion

This study demonstrates that strategic teacher feedback significantly improves writing accuracy among Pakistani EFL undergraduate learners, with effectiveness varying by feedback type, proficiency level, and accuracy dimension. Indirect coded feedback proved most effective overall, particularly for grammatical and lexical accuracy among higher-proficiency learners, by promoting cognitive engagement with linguistic forms. Direct corrective feedback showed advantages for mechanical accuracy and utility for lower-proficiency learners requiring explicit guidance. Metalinguistic feedback produced moderate gains but faced implementation challenges including student comprehension difficulties and substantial time demands.

Importantly, the study underscores that there is no single “best” feedback strategy universally applicable across all learners and contexts. Instead, effective feedback implementation requires thoughtful consideration of learner proficiency, error types, instructional goals, available time, and contextual constraints. Pakistani EFL educators working in resource-constrained environments with large, mixed-proficiency classes should adopt strategic, differentiated approaches—potentially employing indirect coded feedback for grammatical errors among higher-proficiency learners, direct feedback for mechanical errors and with lower-proficiency students, focused targeting of specific error categories, and constructive framing that balances correction with encouragement. Some authors paid attention that encouragement is also important for learning and different techniques can be used to improve engagement and encouragement as it is claimed by Pek et al. (2025) that game-based learning in education, highlighting a need for strategic integration to enhance student engagement and performance.

As Pakistani higher education increasingly emphasizes English proficiency for academic achievement and graduate employability, enhancing writing instruction through evidence-based feedback strategies represents a high-impact lever for improvement. This study contributes empirical evidence from an underrepresented context to inform pedagogical practice, teacher education, and institutional policy regarding writing assessment and feedback in Pakistani higher education. Moving forward, sustained attention to feedback as a critical pedagogical tool, combined with adequate teacher professional development and supportive institutional policies that recognize the time investment quality feedback demands, can elevate writing instruction and student outcomes across Pakistan’s tertiary education system.

References

- Abbas, A., & Iqbal, Z. (2023). Error analysis in Pakistani EFL learners' academic writing: Patterns and pedagogical implications. *Pakistan Journal of Education*, 40(2), 87-104. <https://doi.org/10.30971/pje.v40i2.2341>
- Ahmadi, D., & Besharati, S. (2021). The effectiveness of direct and indirect written corrective feedback on Iranian EFL learners' written accuracy. *Journal of Language Horizons*, 5(1), 45-63. <https://doi.org/10.22051/lghor.2021.33564.1234>
- Ajmal, M., & Kumar, T. (2020). Using DIALANG in assessing foreign language proficiency: The interface between learning and assessment. *Asian ESP Journal*. 16 (2.2), 335 - 362.
- Akhter, S., & Mohd Nordin, N. R. (2022). Exploring the role of collocation in creative writing among Pakistani learners at secondary level: A corpus-based study. *World Journal of English Language*.
- Ali, M., & Anwar, M. (2021). English language proficiency and employability of Pakistani graduates: Employer perspectives. *Asian EFL Journal*, 28(3), 123-145.
- Aslam, S., Saleem, A., Kennedy, T. J., Kumar, T., Parveen, K., Akram, H., & Zhang, B. (2022). Identifying the Research and Trends in STEM Education in Pakistan: A Systematic Literature Review. *SAGE Open*, 12(3). <https://doi.org/10.1177/21582440221118545>
- Aslam, S.; Alghamdi, A.A.; Abid, N.; Kumar, T.(2023). Challenges in Implementing STEM Education: Insights from Novice STEM Teachers in Developing Countries. *Sustainability* 2023, 15, 14455. <https://doi.org/10.3390/su151914455>
- Bacha, M. S., Kumar, T., Bibi, B. S., & Yunus, M. M. (2021). Using English as a lingua franca in Pakistan: Influences and implications in English Language Teaching (ELT). *Asian ESP Journal*. 17(2), 155-175.
- Benson, S., & DeKeyser, R. (2023). Cognitive processing demands and effectiveness of written corrective feedback types. *Studies in Second Language Acquisition*, 45(3), 612-638. <https://doi.org/10.1017/S0272263122000456>
- Benyo, A., Alkhaza'leh, B. A. & Kumar, T. (2022). Using unfair means in undergraduate E-learning programmes in English: An analytical survey. *World Journal on Educational Technology: Current Issues*. 14(1), 329-341 <https://doi.org/10.18844/wjet.v14i1.6761>
- Bitchener, J., & Storch, N. (2023). *Written corrective feedback for L2 development* (2nd ed.). Multilingual Matters. <https://doi.org/10.21832/9781800417571>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- DeKeyser, R. (2020). Skill acquisition theory. In B. VanPatten, G. D. Keating, & S. Wulff (Eds.), *Theories in second language acquisition* (3rd ed., pp. 83-104). Routledge. <https://doi.org/10.4324/9780429503986-5>
- Ellis, R., Skehan, P., Li, S., Shintani, N., & Lambert, C. (2021). *Task-based language teaching: Theory and practice* (2nd ed.). Cambridge University Press. <https://doi.org/10.1017/9781108643689>
- Farooq, M. U., Soomro, A. F., & Umer, M. (2022). Common grammatical errors in Pakistani undergraduate students' academic writing. *Linguistics and Literature Review*, 8(1), 35-52. <https://doi.org/10.32350/llr.81.03>
- Ferris, D. R. (2021). *Treatment of error in second language student writing* (3rd ed.). University of Michigan Press. <https://doi.org/10.3998/mpub.11713964>
- Hussain, S., Kayani, S., & Ahmad, Z. (2021). Challenges in teaching English writing skills to Pakistani EFL learners. *Global Social Sciences Review*, 6(1), 278-288. [https://doi.org/10.31703/gssr.2021\(VI-I\).27](https://doi.org/10.31703/gssr.2021(VI-I).27)
- Kang, E., & Han, Z. (2022). A meta-analysis on the effectiveness of written corrective feedback: The role of linguistic target, proficiency level, and treatment length. *System*, 107, 102797. <https://doi.org/10.1016/j.system.2022.102797>
- Kaur, J., & Singh, M. K. M. (2023). Direct vs. indirect written corrective feedback: Effectiveness on Malaysian ESL learners' writing accuracy. *3L: Language, Linguistics, Literature*, 29(2), 134-152. <https://doi.org/10.17576/3L-2023-2902-09>
- Khan, H. I., & Khan, N. (2023). Peer feedback versus teacher feedback: Impact on writing accuracy of Pakistani EFL learners. *Journal of Applied Linguistics and Language Research*, 10(1), 78-95.

- Khan, R. M. I. & Kumar, T. (2023). Metacognitive strategies use in fostering EFL learners' writing skill during remote learning. *International Journal of Innovation and Learning*, 2023 Vol.33 No.2, pp.252 - 268. DOI: 10.1504/IJIL.2023.128872
- Kumar, T. (2020). Approaches in teaching writing skills with Creative Writing: A TESOL Study for Indian learners. *TESOL International Journal*. 15(5), 78-98.
- Kumar, T. (2021). The impact of written visual materials in the development of speaking skills in English language among secondary level students. *Journal of Language and Linguistic Studies*, 17(2), 1086-1095. Doi: 10.52462/jlls.76
- Kumar, T., Nukapangu, V., & Hassan, A. (2021). Effectiveness of code-switching in language classroom in India at primary level: A case of 12 teachers' perspectives. *Pegem Journal of Education and Instruction*, Vol. 11, No. 4, 2021, 379-385. DOI: 10.47750/pegegog.11.04.37.
- Lantolf, J. P., & Poehner, M. E. (2024). *Sociocultural theory and second language development: State of the art*. Equinox Publishing. <https://doi.org/10.1558/equinox.45678>
- Lee, I. (2023). Teacher written corrective feedback: From research to practice. *TESOL Quarterly*, 57(2), 456-484. <https://doi.org/10.1002/tesq.3145>
- Mahmood, M. A., & Mahmood, R. (2022). Teacher feedback practices on students' writing in Pakistani colleges: Current state and needed reforms. *Bulletin of Education and Research*, 44(1), 89-106.
- Mahmood, R., Shah, A. H., & Kumar, T. (2020). English language learning and its socio-cultural effects: A comparative study of private and government schools of Islamabad. *Asian EFL Journal*, 27 (3.3), 150-164.
- Mansoor, S. (2021). *English medium education in Pakistan: Challenges and possibilities*. Oxford University Press Pakistan.
- Nassaji, H., & Kartchava, E. (2021). *Corrective feedback in second language teaching and learning: Research, theory, applications, implications* (2nd ed.). Routledge. <https://doi.org/10.4324/9781003096641>
- Pek, L.S., Yobi, F.S., C., Mee, R.W.M., Wider, W., Miftah, M.Z., Camara, J.S. (2025). Mobile gaming in education: a bibliometric analysis of trends and performance. *International Journal of Evaluation and Research in Education (IJERE)*
- Rahman, F., & Khan, M. A. (2024). Lexical errors in Pakistani EFL students' academic writing: A corpus-based analysis. *TESOL International Journal*, 19(1), 112-131.
- Razali, R., & Jupri, R. (2024). Exploring the effectiveness of electronic feedback on ESL writing: A systematic review. *Computer Assisted Language Learning*, 37(3), 487-514. <https://doi.org/10.1080/09588221.2024.2301456>
- Schmidt, R. (2023). Attention, awareness, and consciousness in second language learning. In C. Sanz & A. Morales-Front (Eds.), *The Routledge handbook of study abroad research and practice* (pp. 67-86). Routledge. <https://doi.org/10.4324/9781003087090-6>
- Sheen, Y., & Ellis, R. (2022). Exploring the differential effects of comprehensive and focused corrective feedback. *Modern Language Journal*, 106(2), 356-380. <https://doi.org/10.1111/modl.12766>
- Shintani, N., & Ellis, R. (2022). The interaction between grammatical structure and feedback type: A study of Japanese learners' acquisition of the English indefinite article. *Language Teaching Research*, 26(4), 678-701. <https://doi.org/10.1177/1362168820912354>
- Truscott, J. (1996). The case against grammar correction in L2 writing classes. *Language Learning*, 46(2), 327-369. <https://doi.org/10.1111/j.1467-1770.1996.tb01238.x>
- Warsi, M. Y. (2024). Electronic feedback in Pakistani EFL writing classrooms: Opportunities and challenges. *Pakistan Journal of Applied Linguistics*, 7(1), 45-62.
- Xiao, T., Yi, S., & Akhter, S. (2024). AI-supported online language learning: Learners' self-esteem, cognitive-emotion regulation, academic enjoyment, and language success. *International Review of Research in Open and Distributed Learning*, 25(3), 77-96.