
Prepositional Errors in English as a Foreign Language: L1 Interference, Trilingual Transfer, and Task-Format Effects Among Moroccan Arabic Undergraduates.

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Abstract

This study investigates the influence of first language (L1) interference on English preposition of place acquisition among Moroccan Arabic-speaking undergraduates. The present study has three objectives. The first objective is to quantify L1 interference effects using chi-square analysis across three task formats. The second objective is to identify which prepositions generate disproportionate errors and explain their differential difficulty structurally. The third objective is to examine whether French as a co-present language in Morocco's trilingual educational environment functions as an additional transfer source. Fifty participants completed a translation task, a multiple-choice questionnaire (MCQ), and a fill-in-the-blanks exercise; 15 participants took part in semi-structured interviews stratified by proficiency level. Fifty participants completed a translation task, a multiple-choice questionnaire (MCQ), and a fill-in-the-blanks exercise; 15 participants took part in semi-structured interviews stratified by proficiency level.

Keywords: analysis; Arabic; EFL; error; interference; L1; Moroccan; prepositions; transfer; trilingual

1. Introduction

Prepositions constitute one of the most persistent sources of difficulty for EFL learners. Despite their grammatical brevity, they encode complex spatial and logical relationships that resist neat cross-linguistic mapping (Celce-Murcia & Larsen-Freeman, 1999). This difficulty is compounded when learners operate within a multilingual environment, where multiple languages may simultaneously exert structural influence on target language production. For Moroccan Arabic speakers navigating a trilingual environment of Darija, French, and English this challenge is uniquely layered and, to date, virtually unstudied. Existing error analysis (EA) research on prepositional errors has focused predominantly on South Asian (Bilal et al., 2013; Akhtar et al., 2017), Gulf Arabic (Al-Qahtani, 2019; Al-Bawaleez & Abdullah, 2023), and Southeast Asian (Nawangasasi & Wijana, 2019) learner populations. Studies targeting the Moroccan context are entirely absent from the literature, leaving a significant empirical and theoretical gap in our understanding of prepositional error patterns among North African EFL learners. Two strands of AWEJ-published scholarship provide the most direct foundation for the present study. Nasser (2020) demonstrated that EFL learners from Arabic-speaking backgrounds face particular difficulty with spatial prepositions whose multiple semantic prototypes, such as 'on', create systematic confusion; a finding the present study extends to a full seven-preposition inventory across three task formats. Zaabalawi (2021) showed experimentally that explicit translation-based instruction reduces prepositional errors among Arab EFL learners significantly more than implicit approaches, underscoring the role of L1 transfer as both a source of error and a potential pedagogical resource. Both studies, however, draw on monolingual Arabic or Gulf-Arabic contexts in which a single L1 operates as the source of interference. The present study departs from this bilateral model by introducing the Moroccan multilingual environment specifically the co-presence of French as a second potential transfer source alongside Darija as a theoretically underexplored variable that existing frameworks cannot adequately account for.

The present study addresses this gap through a mixed-methods explanatory sequential design combining three quantitative task formats with semi-structured qualitative interviews. It makes two principal contributions to the EA literature. First, it provides the first systematic, statistically grounded analysis of English prepositional errors among Moroccan Arabic-speaking undergraduates, applying chi-square analysis to determine whether errors are distributed uniformly

across prepositions or concentrated in structurally predictable ways. Second, it introduces French co-interference as an exploratory theoretical variable, drawing on qualitative interview data to examine whether French as the dominant medium of Moroccan higher education functions as a secondary transfer source alongside Darija. By anchoring each analytic objective to a specific methodological procedure, the study responds to calls in the EA literature for greater transparency in mixed-methods designs (Creswell & Plano Clark, 2018).

2. Literature Review

2.1 Error Analysis: Theoretical Framework

Error Analysis emerged in response to the limitations of Contrastive Analysis, shifting focus from prediction to description of learner errors as evidence of evolving interlanguage systems (Corder, 1967; Selinker, 1972). Brown (2000) distinguished mistakes temporary performance lapses from errors, which are systematic deviations revealing interlanguage competence. Corder's (1974) five-step framework collecting, identifying, describing, explaining, and evaluating errors remains the methodological standard applied here. Dulay et al. (1982) classified surface error types as omission, addition, misformation, misordering, and blends; these categories inform the present study alongside an interlingual/intralingual distinction.

2.2 Prepositional Errors in Arabic EFL Contexts

Prepositions present particular EFL challenges because their semantic scope varies significantly across languages (Lindstromberg, 1998), English has an unusually large prepositional inventory of 60–70 items (Kofi, 2010), and many carry abstract meanings that resist L1 transfer. Substitution is the most frequent error type in the EA literature (Wairimu & Ngugi, 2021; Bilal et al., 2013). In Arabic EFL contexts specifically, Nasser (2020) identified 'on' as particularly problematic due to its multiple semantic prototypes, while Al-Qahtani (2019) confirmed that interlingual errors directly attributable to Arabic L1 structure predominate over intralingual ones. Prior research has focused almost exclusively on the 'in/on/at' cluster; no study known to the authors has specifically examined 'over' as a target preposition in Arabic EFL error analysis, a gap the present study addresses directly. Zaabalawi (2021) provides the most directly relevant experimental evidence: Arab EFL learners receiving explicit, translation-based prepositional instruction outperformed those receiving implicit instruction on post-test production tasks, supporting the exemplar-based pedagogical recommendations advanced in Section 6.

2.3 Trilingual Transfer and the Moroccan Linguistic Context

The majority of EA studies adopt a bilateral L1-L2 transfer model, which is theoretically limiting for multilingual learners (Cenoz, 2001; De Angelis, 2007). Moroccan Arabic (Darija) is the dominant vernacular; French is the primary medium of higher education; English is typically acquired as the third or fourth language. Darija employs a parsimonious prepositional system: 'f-' covers the range of English 'in,' 'at,' and partially 'on'; 'fuq' covers both 'on' and 'over'; 'hda' covers 'by,' 'near,' 'beside,' and 'next to.' Where Darija uses one form, English requires selection among multiple prepositions based on distinctions Darija does not grammaticalise generating predictable, structurally explicable error hierarchies. French spatial prepositions 'dans,' 'sur,' 'à,' 'en' partially overlap with English equivalents but diverge systematically, potentially constituting a second transfer source. Following De Angelis's (2007) psychotypology principle, learners may preferentially activate the language that feels typologically closest to English at moments of uncertainty; French, being more morphosyntactically similar to English than Darija, may be activated at higher proficiency levels. The present study treats this as an exploratory hypothesis examined qualitatively, given the absence of French proficiency measures in the dataset.

3. Methodology

3.1 Research Design

This study adopts a mixed-methods explanatory sequential design (Creswell & Plano Clark, 2018): quantitative data collection and analysis preceded and informed qualitative inquiry. The five chi-square tests were specified prior to data collection, each mapped to a distinct research sub-question, ensuring that statistical analysis reflects the study's original design rather than post-hoc exploration. The qualitative phase provided explanatory depth for patterns identified quantitatively.

3.2 Research Questions

Four research questions, each paired with a pre-specified analytic procedure, guided the study. The first question asks whether Moroccan Arabic (L1) interference effects produce significantly non-uniform error distributions across seven target prepositions, addressed through chi-square goodness-of-fit tests applied across three task formats. The second question asks whether task format translation, MCQ, and free production significantly moderates which prepositions appear most error-prone, addressed through a chi-square independence test on a 3×7 contingency table. The third question asks whether the rate of error repetition across tasks exceeds

chance and what this indicates about the stability of L1 schemata, addressed through a binomial-equivalent chi-square test. The fourth question is exploratory: it asks what qualitative evidence exists for French as a co-transfer source alongside Darija, addressed through thematic analysis of semi-structured interview data.

3.3 Participants

Fifty Moroccan undergraduate students participated in the quantitative phase (56% female, 44% male; modal age 19; 44% first-year, 42% second-year, 14% third-year; proficiency: 10% beginner, 56% intermediate, 28% advanced, 6% native-like; L1: Moroccan Arabic throughout). Proficiency was assessed by instructor rating in the absence of standardised CEFR testing a limitation discussed in Section 7. Fifteen participants were selected for the qualitative phase via purposive stratified sampling: five intermediate and five advanced participants formed the primary interview groups. Five beginner-level participants were also interviewed; given the very small size of this sub-group ($n=5$ of 50), their responses are treated as illustrative cases rather than as representative of the beginner population, and no categorical generalisations about beginners as a group are advanced beyond what these five cases can directly support.

3.4 Instruments

Three quantitative instruments targeted seven prepositions of place: in, on, by, over, under, between and at, across 21 items each. The Translation Task required participants to translate Darija sentences into English under a 30-minute time constraint, maximising L1 activation. The Multiple-Choice Questionnaire (MCQ) deliberately embedded correct answers from the translation task as one of three options a design feature chosen to isolate whether errors reflect entrenched L1 schemata rather than production difficulty alone (10 minutes). The Fill-in-the-Blanks Task required uncued preposition insertion from a closed seven-item list in five minutes, measuring implicit prepositional knowledge without recognition scaffolding.

Error repetition, the primary measure for RQ3, was operationalised as follows: a participant was coded as repeating an error if they produced an incorrect preposition for a given target sentence in the translation task and subsequently selected an incorrect preposition for the corresponding MCQ item targeting the same preposition category. This operationalisation captures systematic prepositional schema activation rather than requiring verbatim error reproduction.

Semi-structured interviews (20–30 minutes, audio-recorded with consent) used two proficiency-matched protocols. Neither protocol named French directly; references to French mediation emerged spontaneously or in response to the question 'which language do you think in first when you are unsure?' a design choice that ensures French co-interference, where observed, reflects genuine cognitive practice rather than experimenter suggestion.

3.5 Statistical Analysis

Five chi-square tests were pre-specified, each addressing a distinct sub-question. Tests 1–3 were goodness-of-fit tests examining whether errors were equally distributed across seven prepositions within each task (H_0 : equal distribution). Test 4 was a 3×7 chi-square independence test examining whether error patterns differed across task types (H_0 : task type does not moderate prepositional difficulty). Test 5 was a binomial-equivalent chi-square testing whether the observed error repetition rate exceeded the 50% chance baseline (H_0 : repetition is random). Effect sizes are reported as Cramér's V throughout; significance threshold $\alpha = .05$. Qualitative data were analysed thematically following Braun and Clarke (2006), with cross-phase triangulation mapping interview themes to quantitative error patterns.

4. Findings

4.1 RQ1 — Translation Task: Error Distribution Under Direct L1 Activation

The translation task required participants to process Darija input before producing English output, maximising L1 activation. Test 1 confirmed that errors were significantly non-uniform across prepositions ($\chi^2(6) = 58.51$, $p < .001$, $V = .26$), rejecting the null hypothesis of equal distribution and establishing that L1 interference is preposition-specific rather than uniform. The effect size falls in the small-to-moderate range consistent with distributional data in educational linguistics and reflects meaningful structural differences in prepositional difficulty rather than a trivial statistical artefact of sample size. Table 1 and Figure 1 present full results.

Table 1

Translation Task: Error Distribution by Target Preposition

Preposition	Error %	Primary Type	Common Substitutes	L1 Attribution
IN	30.8%	Substitution	at, on, Ø	Strong
ON	23.1%	Substitution	in, over	Strong
BY	15.4%	Substitution	near, next to, beside	Strong
OVER	12.3%	Substitution	on, above, on top of	Strong
UNDER	7.69%	Sub./Omission	in, below	Moderate
AT	6.15%	Substitution	in, on	Moderate
BETWEEN	4.62%	Substitution	among, next to	Moderate

Figure 1. Translation Task: Proportional Error Distribution by Preposition
 $\chi^2(6) = 58.51, p < .001, \text{Cramér's } V = .26$

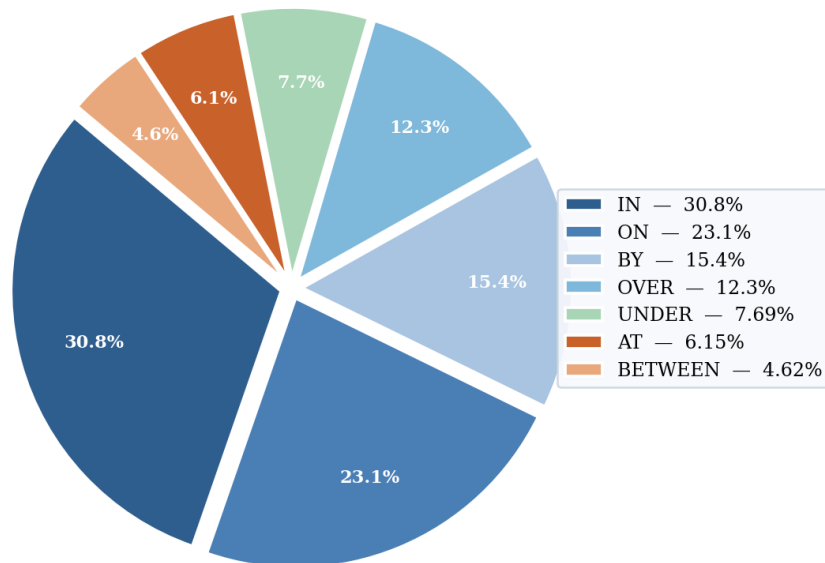


Figure 1. Proportional distribution of translation errors across seven prepositions (N=50). $\chi^2(6)$ = 58.51, $p < .001$, Cramér's $V = .26$.

'In' generated the highest error share (30.8%), reflecting the broad scope of Darija 'f-', which covers 'in,' 'at,' and partially 'on.' Participants substituted 'at' for 'in' in enclosed-space contexts (e.g., 'The children are playing at the garden'). 'On' errors (23.1%) typically involved 'in' substitution for surface-contact contexts, traceable to Darija 'fuq,' which conflates surface contact and non-contact vertical positioning. 'By' errors (15.4%) reflected failure to map Darija 'hda' onto English's finer-grained proximity vocabulary. Notably, 'over' ranked fourth in the translation task (12.3%) a position whose significance becomes apparent only in comparison with the free production results in Section 4.3, where it becomes the most error-prone form in the entire dataset.

4.2 RQ3 — Error Persistence: MCQ Performance and the Repetition Rate

Of the 50 participants, 38 (76%) who made errors in the translation task repeated an error for the same target preposition category in the subsequent MCQ, despite the correct answer being available as one of three options. Test 5 confirmed that this rate significantly exceeds the 50% chance baseline ($\chi^2(1) = 13.52, p < .001, V = .52$). The effect size of .52 crosses the conventional threshold for a large effect, meaning the error persistence observed here is not a marginal statistical finding but a substantive, replicable pattern consistent with systematic L1 schema activation. Figure 5 illustrates the repetition distribution.

Figure 5. Error Repetition: Translation → MCQ (N=50)
 $\chi^2(1) = 13.52, p < .001$, Cramér's $V = .52$ (large effect)

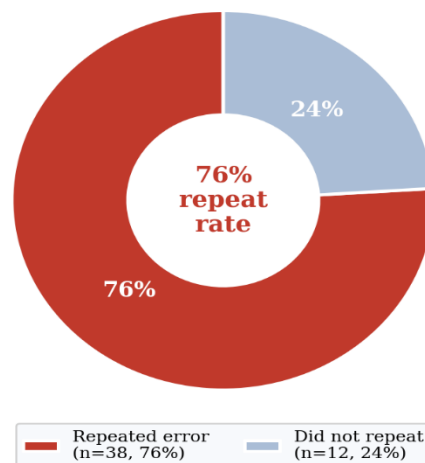


Figure 5. Error repetition from translation to MCQ (N=50). $\chi^2(1) = 13.52, p < .001$, Cramér's $V = .52$. Error repetition operationalised as selecting an incorrect preposition for the same target preposition category across both tasks.

Test 2, the MCQ goodness-of-fit analysis, produced a non-significant result ($\chi^2(6) = 4.06$, $p = .668$, $V = .07$), indicating that error rates across the seven prepositions were statistically indistinguishable under recognition conditions. This result does not contradict the large repetition effect reported above, it refines it. L1 schemata are strong enough to drive 76% error repetition systematically (Test 5), yet the recognition format distributes that interference so evenly across prepositions that structural difficulty differences become statistically invisible (Test 2). The scaffolding does not eliminate L1 interference; it conceals its internal structure. The free production data in Section 4.3 restore that structure. Figure 2 and Table 2 present MCQ results.

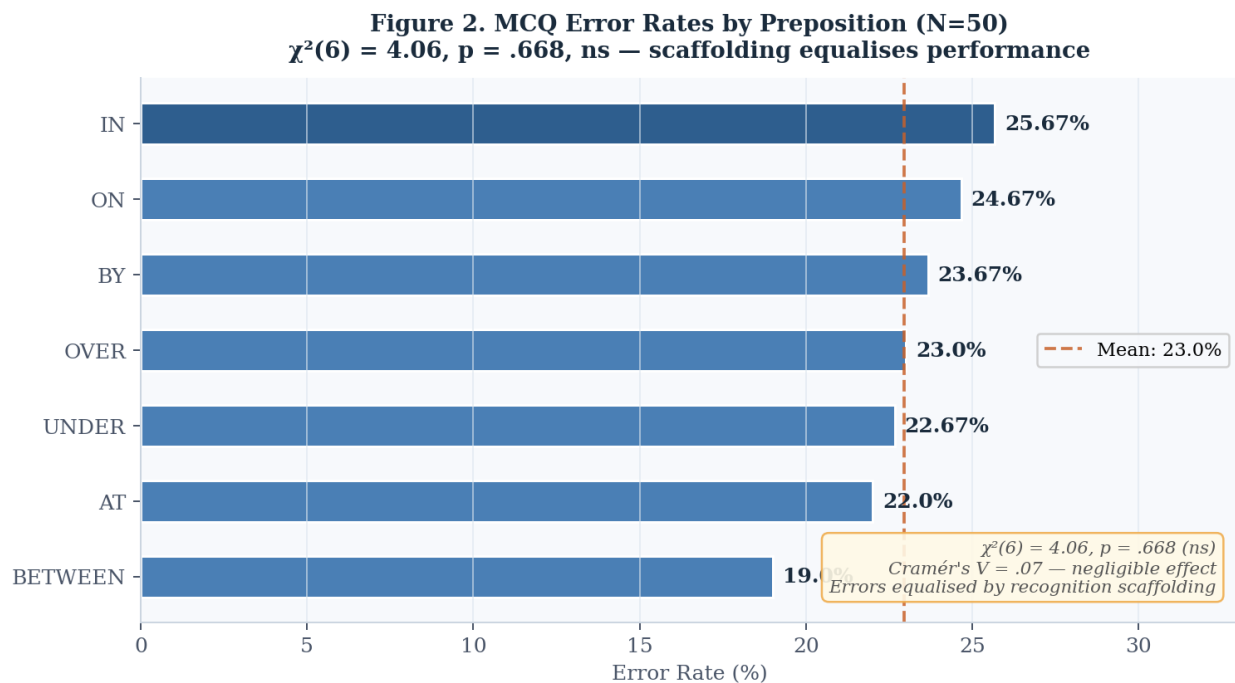


Figure 2. MCQ error rates by preposition, ranked highest to lowest. $\chi^2(6) = 4.06$, $p = .668$, ns — recognition scaffolding equalises prepositional difficulty (N=50).

Table 2

MCQ Error Rates by Preposition (N=50)

Preposition	Total Errors	Error Rate (%)	Primary Confusion
IN	27	25.67%	at / on
ON	26	24.67%	in / at
BY	24	23.67%	near / beside
OVER	24	23.00%	on / above
UNDER	22	22.67%	in / below
AT	22	22.00%	in
BETWEEN	15	19.00%	among / next to

I. 4.3 RQ1 — Fill-in-the-Blanks: Implicit Production Without Scaffolding

Removing recognition scaffolding restored the prepositional difficulty differences that MCQ performance had concealed. Test 3 confirmed that errors were again significantly non-uniform across prepositions ($\chi^2(6) = 30.47, p < .001, V = .20$). The most consequential finding is the 'over' spike: 32 of 50 participants (64%) produced an incorrect preposition in free production — a deviation of +14.1 above the expected frequency under the null hypothesis of equal distribution, and the largest single deviation in the entire dataset. This compares directly with 'over's' MCQ rate of 23% and its translation share of 12.3%, a pattern whose cross-task significance is examined in Section 4.4. Figure 3 and Table 3 present full results.

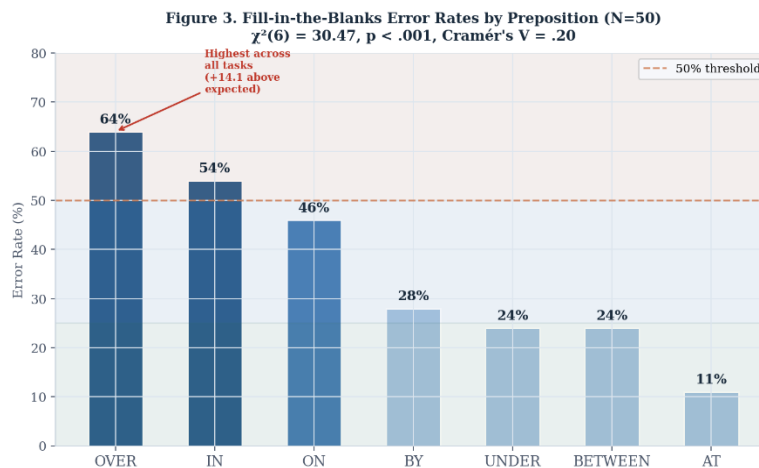


Figure 3. Fill-in-the-blanks error rates with difficulty bands: high (>50%), moderate (25–50%), lower (<25%). $\chi^2(6) = 30.47, p < .001, \text{Cramér's } V = .20 (N=50)$.

Table 3

Fill-in-the-Blanks Error Rates by Preposition (N=50)

Preposition	Items	Total Resp.	Errors	Error Rate	Key Substitution
OVER	1	50	32	64%	on / above
IN	1	50	27	54%	on / at
ON	2	100	46	46%	in / at
BY	1	50	14	28%	near / at
UNDER	2	100	24	24%	in / below
BETWEEN	1	50	12	24%	among / on
AT	2	100	11	11%	in

Note. Values for ON, UNDER, and AT normalised to per-50-attempt basis where items appeared twice.

'Over's' elevation in free production is structurally explicable: English distinguishes between surface contact ('on': the book is on the table) and non-contact vertical positioning ('over': the plane flew over the house). Darija 'fuq' encodes both relationships without differentiation, rendering the distinction invisible to learners until explicit instruction targets it. 'At' generated the lowest error rate (11%), consistent with Zaabalawi's (2021) finding that fixed-phrase automatisations reduces production errors effectively.

4.4 RQ2 — Cross-Task Comparison: Task Format as a Moderating Variable

Test 4, the 3×7 chi-square independence test, confirmed that task format significantly moderates which prepositions appear most error-prone ($\chi^2(12) = 32.02$, $p = .001$, $V = .19$): error patterns are not consistent across task types. The interaction is visible in Figure 4 and is driven primarily by 'over,' which declines from 18 errors in translation, reaches statistical parity with all other prepositions in the MCQ (24 errors), then spikes to 32 errors in free production. This non-monotonic trajectory identifies 'over' as the preposition most sensitive to assessment format — and therefore most likely to be systematically underestimated in studies relying exclusively on

recognition-format instruments. The contrast between the significant Tests 1 and 3 and the non-significant Test 2 is itself instructive: recognition scaffolding equalises what free production differentiates. Taken together, these results show that the choice of assessment method is not methodologically neutral — it determines which difficulties remain visible.

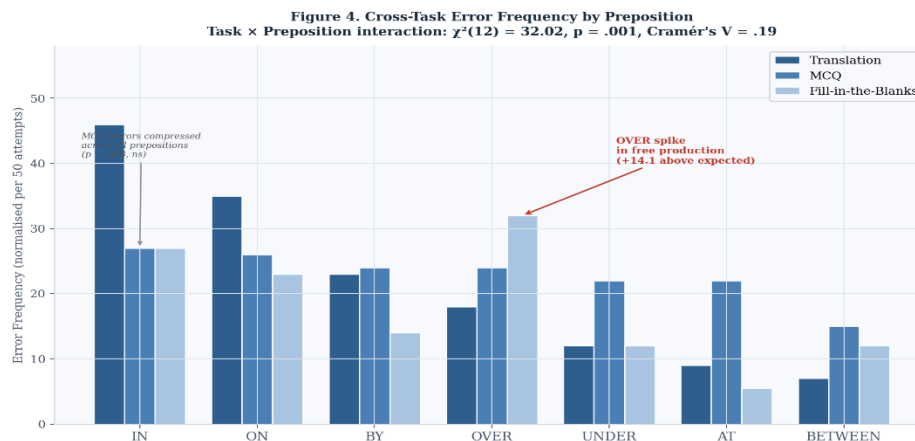


Figure 4. Cross-task error frequency by preposition (normalised per 50 attempts). Task × Preposition interaction: $\chi^2(12) = 32.02$, $p = .001$, Cramér's $V = .19$ ($N=50$).

4.5 Chi-Square Summary

Table 4 consolidates all five test results for reference.

Table 4

Summary of Chi-Square Results Across Five Tests

Test	χ^2	df	p-value	V	Sig.	H ₀
1. Translation error distribution	58.51	6	< .001	.26	***	Reject
2. MCQ error distribution	4.06	6	.668	.07	ns	Retain
3. Fill-in-the-blanks distribution	30.47	6	< .001	.20	***	Reject
4. Task × Preposition interaction	32.02	12	.001	.19	**	Reject
5. Error repetition vs. chance	13.52	1	< .001	.52	***	Reject

Note. Significance: *** $p < .001$ | ** $p < .01$ | ns = not significant. Cramér's V : < .10 negligible | .10–.30 small | .30–.50 moderate | > .50 large.

4.6 RQ4 — Qualitative Findings: French as an Exploratory Co-Transfer Variable

Interview data provided explanatory context for the quantitative patterns and yielded a qualitative finding regarding French co-interference that warrants theoretical attention, though it is presented here as an exploratory observation rather than a confirmed claim, for reasons explained below. Findings are organised by proficiency group.

The five beginner-level interviewees treated throughout as illustrative cases given the sub-group's size demonstrated near-exclusive reliance on Darija 'f-' as their spatial reference, producing the 'in/at/on' confusion pattern that quantitative data confirm as the most prevalent error type. None mentioned French spontaneously as a mediating language; three acknowledged occasionally defaulting to French when Darija equivalents felt insufficient, though they described this as uncommon. These cases suggest that French transfer may not be the primary error mechanism at early acquisition stages, though the sub-group is too small to support generalisation.

Among the five intermediate participants, a more consistent pattern emerged. All five described, without prompting, code-switching into French when constructing spatial representations particularly for 'at' (which they mapped to French 'à') and 'in' (mapped to 'dans' or 'en'). One participant stated: 'When I don't know the English, I think in French first but sometimes French and English are different, so I make mistakes.' Importantly, this French mediation did not function as a corrective resource. The multifunctional French 'à' maps onto both 'at' and 'in' in English depending on context, potentially compounding rather than resolving Darija-sourced confusion, a mechanism consistent with De Angelis's (2007) account of how typologically proximate languages can amplify rather than offset transfer errors.

The five advanced participants described spatial logic strategies 'I ask myself: is the object inside something, or just touching it?', reflecting substantially reduced reliance on either Darija or French. Three participants with self-reported high French proficiency still acknowledged using French-derived schemas for 'in/on' distinctions, suggesting residual French transfer precisely where French competence is strongest and English has not yet been fully automatised.

Two interpretive cautions apply. First, the 'in/at' confusion patterns attributed partly to French 'à' are equally consistent with Darija 'f-' transfer alone; the two sources cannot be disentangled without independent French proficiency measurement and concurrent think-aloud data, neither of which was available in this study. Second, because French arose spontaneously in interviews rather than

in response to a direct prompt, its role as a transfer source reflects genuine learner behavior, but the evidence remains qualitative and exploratory. These findings are best understood as generating a testable hypothesis for future research: that French proficiency moderates prepositional error type in Moroccan EFL learners in ways that Darija-only transfer models cannot predict.

5. Discussion

5.1 RQ1 and RQ3: Structural, Preposition-Specific, and Persistent Interference

Tests 1 and 3 confirm that prepositional errors in this dataset are not uniformly distributed: specific prepositions generate significantly more errors than others in both translation ($\chi^2(6) = 58.51$, $p < .001$) and free production ($\chi^2(6) = 30.47$, $p < .001$). The error hierarchy is structurally explicable, prepositions encoding distinctions absent from Darija generate the most errors; those with approximate Darija equivalents or fixed-phrase support generate the fewest. Test 5 establishes that this interference is not merely surface-level: it is stable enough to drive systematic error repetition well above chance ($\chi^2(1) = 13.52$, $p < .001$, $V = .52$) even when the correct answer is explicitly presented. A Cramér's V of .52 places this finding in the large-effect range, providing quantitative grounding for what Selinker (1972) described theoretically as interlanguage fossilization, the stabilisation of incorrect forms that resist correction through exposure alone.

5.2 RQ2: Assessment Format Is Not a Neutral Measurement Instrument

The significant task $\times$ preposition interaction ($\chi^2(12) = 32.02$, $p = .001$) and the contrast between the significant free-production tests and the non-significant MCQ test ($p = .668$) jointly establish a finding with direct methodological implications for the EA field. Recognition-format tasks statistically equalise performance across prepositions, masking structural difficulty differences that free production exposes. The 'over' data make this concrete: a researcher relying exclusively on MCQ data from this study would conclude that 'over' presents no greater challenge than 'at'; the free production data reveal a 53-percentage-point gap between them (64% vs. 11%). Studies of prepositional competence that rely exclusively on gap-fill or MCQ formats therefore risk systematically underestimating the difficulty of prepositions for which the L1 provides a single polysemous equivalent covering multiple English forms.

5.3 RQ4: French Co-Interference as a Theoretically Productive Hypothesis

The exploratory qualitative evidence for French co-interference, spontaneous French mediation reported by all five intermediate participants, and residual French-schema reliance among three advanced participants, is consistent with De Angelis's (2007) psychotypology principle and merits theoretical attention. However, two alternative explanations cannot be excluded with the current data: the 'in/at' confusion attributed partly to French 'à' may be fully explicable by Darija 'f-' alone, and the absence of a French proficiency measure prevents causal attribution. The theoretical value of this finding lies not in its confirmatory status, it does not have one, but in the precision of the hypothesis it generates: a study incorporating validated French proficiency instruments, think-aloud protocols, and the three-task design used here could, for the first time, directly attribute specific prepositional errors to French rather than Darija transfer in a Moroccan EFL population, contributing empirically to multilingual transfer theory in a context where it remains untested.

6. Pedagogical Implications

Three evidence-grounded implications follow from these findings. First, the statistically confirmed persistence of L1 interference ($V = .52$, large effect) argues that surface-level correction is insufficient. Instruction must address the conceptual spatial distinctions that Darija leaves invisible: the contact/non-contact vertical distinction ('on' vs. 'over') and the containment/point-location distinction ('in' vs. 'at') require explicit, visually grounded demonstration. The 64% free-production error rate for 'over' identifies this preposition as the highest-priority target for conceptually grounded instruction in Moroccan EFL classrooms.

Second, the assessment-format interaction (Test 4, $p = .001$) argues that classroom measurement should incorporate free-production tasks alongside recognition formats. Educators relying solely on MCQ scores will consistently overestimate their students' prepositional readiness, a systematic bias that the present data quantify. Third, if the French co-interference hypothesis is confirmed by future research, explicit comparison of French and English prepositional systems, particularly 'à' vs. 'at/in' and 'sur' vs. 'on/over', represents a low-cost instructional addition available to most Moroccan EFL teachers, who are typically French-proficient.

7. Limitations and Future Directions

Five limitations should be acknowledged. First, the overall sample ($N=50$) and the beginner subgroup in particular ($n=5$) limit generalisability; replication with larger, randomly sampled populations across Morocco's institutionally diverse university system is required before findings can be considered representative. Second, proficiency was assessed by instructor rating rather than standardised CEFR measurement, introducing potential subjectivity into group assignment. Third, individual-level response coding per participant per item was unavailable; such data would enable Kruskal-Wallis testing across proficiency groups and provide more fine-grained inferential analysis than aggregate chi-square permits. Fourth, French proficiency was not independently measured, a critical absence for the French co-interference hypothesis, which future studies should address by incorporating validated French proficiency instruments alongside concurrent think-aloud protocols. Fifth, the chi-square tests use aggregate task-level frequency data; where individual-level data are available, logistic regression models predicting error likelihood from preposition type, task format, and proficiency would provide stronger inferential grounding for the error hierarchy identified here.

8. Conclusion

This study set out to answer a question that the EA literature has addressed elsewhere but never in the Moroccan context: how does first language interference shape English preposition of place acquisition among learners whose linguistic environment is trilingual, and can chi-square analysis provide quantitative grounding for claims that prior studies have made only descriptively? The answer to both parts is affirmative, and the statistical evidence is more robust than the descriptive literature might have anticipated.

Four of five chi-square tests rejected their null hypotheses at $p < .001$ or better. The one that did not, the MCQ error distribution ($p = .668$), produced a non-significant result that is theoretically as consequential as any of the significant ones. The fact that recognition scaffolding statistically erases prepositional difficulty differences, while free production reveals a 53-percentage-point gap between 'over' (64%) and 'at' (11%), is the study's most practically important finding: how prepositional competence is measured determines what is believed about it. An EFL classroom relying exclusively on MCQ assessment will consistently and quantifiably underestimate the depth of its students' L1-driven difficulties.

The large effect size on error persistence ($V = .52$) is the study's most theoretically significant number. It establishes that Moroccan EFL learners do not merely make prepositional errors, they reactivate Darija-derived spatial schemata with sufficient consistency to constitute a large statistical effect even when correct English forms are placed directly in front of them. This is interlanguage fossilisation in the Selinker (1972) sense, and it demands pedagogical responses that go beyond correction: spatial conceptualisation must be taught explicitly, not assumed to emerge from exposure.

The French co-interference finding is presented with the caution its evidential basis warrants as an exploratory hypothesis rather than a confirmed theoretical claim. Its value lies in the research agenda it opens. A study combining French proficiency measurement, think-aloud protocols, and the three-task design used here could, for the first time, disentangle Darija and French transfer contributions to prepositional error in North African EFL, a population of considerable size and growing relevance to multilingual acquisition theory. The present study provides the statistical and methodological foundation for that next step, and identifies, with quantitative precision, exactly where to look.

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