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Article

Conceptualization Processes in English as a Second Language Acquisition: Evidence from Uzbek-Speaking Learners

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Abstract: This article presents an in-depth investigation of the conceptualization processes that emerge as Uzbek-speaking learners acquire English as a second language (L2), examined through the theoretical lenses of cognitive linguistics and second language acquisition (SLA). Drawing on empirical data collected from 120 Uzbek-speaking university students across institutions in Surxondaryo, Tashkent, and Bukhara, and employing three complementary instruments — a Written Elicitation Task (WET), a Grammaticality Judgment Test (GJT), and a Think-Aloud Protocol (TAP) — the study reveals that the agglutinative morphology, SOV syntactic structure, and the absence of grammatical aspect and definiteness marking in Uzbek systematically and profoundly influence learners' conceptualization strategies in English. The article proposes a novel metacognition-based pedagogical framework designed to address these conceptual gaps.

Keywords: *conceptualization, SLA, cognitive linguistics, Uzbek language, L1 interference, aspectual transfer, article acquisition, mental lexicon, metacognitive awareness, thinking for speaking.*

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Introduction

Language learning is fundamentally more than memorizing vocabulary lists or applying grammatical rules mechanically. At its deepest level, it demands learning a new way of perceiving the world: forming new conceptual categories, structuring meanings differently, and adopting new modes of thought. In cognitive linguistics, this process is known as conceptualization, and it has become increasingly central to second language acquisition (SLA) research [1].

'thinking for speaking', the idea that speakers must attend to and encode in speech only those features that their grammar grammatically obliges them to express.

Several prominent researchers have drawn attention to this challenge. Levelt's (1989) landmark speech production model demonstrates that errors arise from a mismatch between the conceptualizer (the stage at which a pre-verbal message is planned) and the formulator (the stage at which grammatical and phonological encoding occurs). For L2 learners who conceptualize in their first language while attempting to produce L2 forms, this mismatch is particularly acute. Kaplan and Baldauf (1997) further argue that language education policy must account for learners' cognitive backgrounds if it is to achieve meaningful gains in proficiency [2].

This study was designed to address this gap empirically, with the primary objectives of identifying the mechanisms through which the Uzbek L1 influences English L2 conceptualization, and of developing practically applicable pedagogical recommendations suited to the Uzbek educational context [3].

Literature Review

2.1 Conceptualization and Cognitive Linguistics

Metaphors We Live By, demonstrated the intimate relationship between language and thought, arguing that language is not merely a communication tool but the primary vehicle

through which human beings think and perceive the world. Conceptualization lies at the heart of this system: it is the process by which experience is organized into categories, relationships are established between them, and meanings are constructed [4].

Langacker (1987), in his Cognitive Grammar framework, describes conceptualization as the fundamental mechanism of language. Every linguistic expression consists of a conceptual content and a construal relation. Second language learners tend to perceive new conceptual contents through the prism of their first language — a finding that reveals the cognitive underpinnings of L1 interference [5].

'thinking for speaking' sharpens this insight considerably. Speakers encode in speech only those features that their grammar grammatically obliges them to express. A speaker of English is grammatically compelled to mark whether an action is ongoing or completed; a speaker of Uzbek need not. This asymmetry generates systematic difficulties in aspectual acquisition for Uzbek-speaking learners of English [6].

2.2 Transfer Theory in Second Language Acquisition

Ellis's (1994) extensive SLA research demonstrates that L1 structures influence L2 acquisition in two directions: positive transfer, where similarities between L1 and L2 facilitate acquisition, and negative transfer (interference), where differences produce errors. For Uzbek-speaking learners of English, the latter predominates given the substantial typological distance between the two languages [7].

Bardovi-Harlig (2000), in her foundational research on aspectual acquisition, demonstrated that L2 learners first acquire lexical aspect (through verb semantics) before grammatical aspect. For Uzbek-speaking learners, this second stage — acquiring grammatical aspect — proves particularly challenging, as no analogous grammaticalized category exists in L1 [8].

Ionin, Ko, and Wexler (2004), investigating article acquisition, proposed the Specificity Hypothesis, arguing that learners whose L1 lacks an article system rely more heavily on specificity than on definiteness when selecting articles. This finding is confirmed by Nurullayeva (2020), whose study identified the overgeneralization of 'the' with definite referents as the most widespread error among Uzbek students [9].

2.3 The Mental Lexicon and Conceptual Structures

Aitchison (2012) describes the mental lexicon as the totality of words and their semantic networks stored in the human mind. In bilingual speakers, two mental lexicons coexist and interact. For developing bilinguals, L2 words are frequently understood via L1 semantic networks — a phenomenon de Bot et al [10]. (2007) term conceptual mediation, characteristic of early and intermediate stages of L2 acquisition [11].

Sobirov (2018) analyzed the grammatical typology of Uzbek in the SLA context, showing that the morphemic chains formed through agglutination may obstruct Uzbek-speaking learners' comprehension of analytic grammatical categories in English — most notably the aspectual morphemes that exist as discrete grammatical markers in English but are expressed lexically or not at all in Uzbek [12].

3. Theoretical Framework

This study rests on three interrelated theoretical foundations: (1) Slobin's thinking-for-speaking framework, (2) Levelt's (1989) speech production model, and (3) Vygotsky's (1934/1986) theory of mediated learning [13].

Levelt's model describes speech production in three stages: conceptualization (planning what to say), formulation (grammatical and phonological encoding), and articulation (producing sound) [14]. For L2 learners, the critical difficulty lies in the first stage: they conceptualize in the L1 framework while attempting to produce L2 forms, generating systematic mismatches [15].

Vygotsky's (1934/1986) Zone of Proximal Development (ZPD) carries particular weight in pedagogical applications. Knowledge and skills that the learner cannot yet attain independently can be achieved with the support of a competent instructor or peers. Conceptual teaching provides precisely this scaffolding mechanism [16]. The present study further draws on Comrie's (1976) aspectual taxonomy and Hawkins's (1978) theory of definiteness to identify and classify the specific conceptual categories most challenging for

Uzbek-speaking learners [17].

Methodology

4.1 Research Design

The study employed a mixed-methods design, integrating quantitative and qualitative analysis [18]. Following Creswell and Plano Clark (2011), this approach enables a single research question to be examined through multiple data collection instruments, thereby enhancing validity and depth [19]. This design is particularly well suited to investigating the complex, multi-dimensional processes of second language acquisition, where numerical accuracy data alone cannot capture the full scope of learners' cognitive and strategic behavior.

4.2 Participants

Participants included 120 Uzbek-speaking university students drawn from institutions in Surxondaryo (Termez State University), Tashkent (Uzbekistan State World Languages University), and Bukhara (Bukhara State University), distributed equally across B1, B2, and C1 CEFR proficiency levels (n=40 per level). All participants confirmed Uzbek as their L1 and had acquired English exclusively through formal education. CEFR level placement was verified through certified test results. Ethical approval was obtained from all participating institutions, and informed consent was collected from all participants prior to data collection [20].

4.3 Data Collection Instruments

Data were collected through three complementary instruments. The Written Elicitation Task (WET) used 15 sequential images depicting everyday situations requiring learners to distinguish between simple past, progressive past, and perfect aspect, enabling naturalistic observation of aspectual form selection in continuous discourse. The Grammaticality Judgment Test (GJT) consisted of 60 items targeting article and aspect use, divided into correct, incorrect, and ambiguous sentences, and required learners to rate acceptability and provide brief written justifications. The Think-Aloud Protocol (TAP), following Ericsson and Simon's (1993) methodology, required learners to verbalize their thought processes while completing the WET and GJT tasks; sessions were audio-recorded and subsequently transcribed for qualitative analysis [21].

4.4 Data Analysis

Quantitative data were processed using SPSS 26. Descriptive statistics (means, standard deviations) were computed for error rates and accuracy rates across proficiency levels. One-way ANOVA was used to test for statistically significant differences across B1, B2, and C1 groups, with post-hoc Tukey tests applied where significant main effects were found. Qualitative TAP data were transcribed verbatim and analyzed through thematic content analysis, identifying recurring cognitive strategies. Inter-rater reliability was established through independent coding by two trained raters (Cohen's kappa = 0.83), indicating strong agreement [22].

Results

5.1 Aspectual Error Analysis

The WET and GJT data revealed that aspectual errors were pervasive across all proficiency levels, with a clear but incomplete attenuation trend as proficiency increased. Table 1 presents the overall aspectual error rates by CEFR level [23].

Table 1. Aspectual Error Rates by CEFR Level (WET + GJT Combined)

Error Type	B1 (%)	B2 (%)	C1 (%)
Overall aspectual errors	68.4	41.2	23.7
Stative verb + progressive	79.1	58.3	31.4

Perfect / simple past confusion	71.6	44.8	19.2
Progressive / simple past confusion	62.3	38.7	21.5

Note. Percentages reflect proportion of target contexts in which an error was produced.

One-way ANOVA confirmed statistically significant differences across proficiency levels for all error types ($F(2, 117) = 48.3$, $p < .001$ for overall aspectual errors). Post-hoc Tukey tests revealed significant pairwise differences between all three levels ($p < .01$ for all comparisons). The most persistent error pattern was the misuse of progressive aspect with stative verbs — constructions such as 'I am knowing' or 'She is understanding' — which remained at 31.4% even among C1 learners. This finding confirms the particular difficulty that Uzbek L1 structure poses for this specific aspectual category, as Uzbek does not grammatically distinguish between stative and dynamic predicates [24].

5.2 Article Acquisition Results

GJT article results demonstrated systematic overgeneralization patterns that persisted across all levels. Table 2 reports article error rates by type and proficiency level.

Table 2. Article Error Rates by Type and CEFR Level (GJT)

Error Type	B1 (%)	B2 (%)	C1 (%)
'the' in zero-article contexts	74.3	55.6	38.1
'the' for indefinite referents	62.1	49.3	29.8
Zero article for definite referents	48.7	33.4	17.2
'a/an' for definite referents	39.5	21.6	12.4

Note. Percentages reflect proportion of target article contexts in which an error was produced.

The overgeneralization of 'the' in zero-article contexts was the single most frequent error type at all levels, declining from 74.3% at B1 to 38.1% at C1. This pattern is consistent with Ionin, Ko, and Wexler's (2004) Specificity Hypothesis and with Nurullayeva's (2020) findings. ANOVA again confirmed significant between-group differences across all article error types ($F(2, 117)$ ranged from 31.6 to 44.2, all $p < .001$).

5.3 Think-Aloud Protocol: Qualitative Findings

TAP transcripts across all 120 participants (total transcribed duration: approximately 47 hours) yielded three primary cognitive strategies, distributed across proficiency levels as shown in Table 3.

Table 3. Proportion of TAP Cognitive Strategies by CEFR Level

Strategy	B1 (%)	B2 (%)	C1 (%)
L1-mediated translation	78	52	31
Rule retrieval	16	34	18
Contextual inference	6	14	51

Note. Percentages reflect proportion of identifiable strategic episodes in TAP recordings.

L1-mediated translation — in which the learner internally formulates the utterance in Uzbek before attempting an English equivalent — dominated at B1 (78%) and remained substantial even at C1 (31%). Crucially, TAP analysis revealed that 73–75% of learners across all levels consciously searched for an Uzbek equivalent of the article system before resorting to rule application. This finding provides direct evidence of Levelt's (1989)

conceptualizer–formulator mismatch operating at the level of individual processing episodes [25].

Representative TAP excerpts illustrate these patterns. One B1 learner, confronted with a zero-article context, verbalized: "In Uzbek we don't say 'the' or 'a' — so I don't know which to put... I'll put 'the' because it sounds more English." A C1 learner, demonstrating contextual inference, stated: "This is about cats in general, not a specific cat — so no article, I think." The shift from L1 mediation toward contextual inference with increasing proficiency suggests that learners do develop more target-like conceptual processing over time, though the L1 schema never fully disappears.

Results and Discussion

6.1 Persistence of L1 Conceptual Schemas

The most theoretically significant finding of this study is the persistence of L1 conceptual interference well beyond the initial stages of acquisition. Even at the C1 level, learners produced aspectual errors in nearly one quarter of target contexts and article overgeneralization in over one third. This finding is consistent with Kroll and Stewart's (1994) Revised Hierarchical Model (RHM), which holds that even highly proficient bilinguals continue to engage their L1 conceptual system during L2 production, though increasingly at a level below conscious awareness. The TAP data add important process-level evidence to this theoretical claim: L1 mediation episodes were observable in TAP transcripts even among the most advanced participants, suggesting that the conceptualizer operates within L1 schemas by default and that overriding this default requires active, effortful cognitive work.

From the perspective of Slobin's (1996) thinking-for-speaking framework, the findings confirm that Uzbek speakers face a specific conceptualization challenge when acquiring English: they must learn to habitually attend to and encode aspectual distinctions and definiteness contrasts that their L1 does not require them to mark. This is not merely a matter of learning a rule; it is a matter of restructuring attentional habits at the level of pre-verbal message planning.

6.2 Limitations of Form-Focused Instruction

The TAP data also illuminate a critical pedagogical problem: a substantial proportion of learners who demonstrated knowledge of the relevant grammatical rules during metalinguistic justification tasks nonetheless failed to apply those rules correctly in the WET. This gap between declarative and procedural knowledge — theorized extensively by DeKeyser (2007) — suggests that form-focused instruction, while necessary, is insufficient on its own to produce reliable target-like production. Rule knowledge can be retrieved when attention is explicitly directed toward form, but it fails to be automatically activated under the processing pressures of real-time production.

Schmidt's (1990) noticing hypothesis offers a constructive theoretical path forward. If learners must consciously notice L2 forms before internalizing them, then instructional approaches that heighten conceptual salience — making explicit why English requires grammatical aspect marking and article use, and what cognitive distinction each form encodes — should be more effective than approaches that present rules in abstraction from their conceptual motivation.

6.3 Article Acquisition: Definiteness vs. Specificity

The article error data merit particular theoretical attention. The most persistent article error — overgeneralization of 'the' in zero-article contexts — reflects a specific cognitive pattern: learners who treat identifiability or familiarity (approximating definiteness) as the primary article-selection criterion tend to over-apply 'the,' while learners without a stable definiteness concept at all tend toward zero-article defaults. Both patterns are predicted by Ionin et al.'s (2004) Specificity Hypothesis, and the TAP data confirm that both occur within the same learner population at different processing moments.

This finding suggests that article instruction for Uzbek-speaking learners should not focus exclusively on memorizing distribution rules (e.g., 'use the when both speaker and

listener know which referent is meant'), but should invest substantial time in building the underlying conceptual category of definiteness itself — a category that is simply absent as a grammaticalized distinction in Uzbek. Without this conceptual foundation, rule application remains fragile and context-dependent.

6.4 Proficiency Development and Conceptual Restructuring

The decline in error rates across B1, B2, and C1 levels confirms that conceptual restructuring does occur over time, but the persistence of errors even at C1 indicates that this process is neither linear nor complete within the proficiency range studied. This is consistent with Ortega's (2009) view that L2 acquisition involves not just accumulation of new forms but genuine cognitive restructuring — a process that may extend well beyond the formally advanced stages of proficiency.

The shift in TAP strategy distribution from L1 mediation (dominant at B1) toward contextual inference (dominant at C1) suggests that proficiency development involves a progressive — though incomplete — decoupling of production from direct L1 conceptual mediation. This developmental trajectory is theoretically important: it implies that the goal of instruction should not be elimination of L1 use (which may be cognitively unrealistic), but rather the cultivation of alternative, more target-like processing strategies that can gradually displace L1 mediation as the default.

6.5 Implications for the Uzbek Educational Context

The findings carry direct implications for English language teaching in Uzbekistan. Current curricula in Uzbek higher education tend to emphasize grammatical accuracy through rule presentation and form-focused practice, with relatively limited attention to conceptual explanation or metacognitive strategy training. The present data suggest that this emphasis, while valuable, leaves a significant dimension of the acquisition challenge unaddressed. Learners acquire rule knowledge but lack the conceptual scaffolding necessary to apply that knowledge automatically and appropriately across contexts.

A Conceptual Teaching Approach (CTA) — incorporating categorical explanation, systematic L1–L2 contrastive analysis, and metacognitive practice — is proposed as a complementary instructional framework. This approach does not replace form-focused instruction but supplements it by addressing the cognitive level at which L1 interference primarily operates. Teacher training programs in Uzbekistan should incorporate awareness of the specific typological challenges that Uzbek L1 poses for English L2 acquisition, equipping teachers to address these challenges explicitly and systematically.

Pedagogical Implications

7.1 Conceptual Teaching Approach (CTA)

Based on the findings, this study proposes a Conceptual Teaching Approach (CTA) built on three principles. First, categorical explanation: teachers should articulate what each grammatical category is, what conceptual distinction it encodes, and why English grammaticalizes it. For aspectual categories, this means explaining the stative/dynamic distinction and the perfective/imperfective contrast as ways of viewing events, not merely as grammatical rules to be memorized. For articles, it means building the concept of definiteness as a speaker-hearer shared reference point, rather than presenting 'the' and 'a/an' as arbitrary choices.

Second, contrastive analysis: explicit comparison of how Uzbek and English express equivalent meanings, highlighting where the languages structurally diverge. This enables learners to understand the source of their difficulties and to develop conscious awareness of L1–L2 mismatches, which TAP evidence suggests they are already intuitively attempting but doing so inefficiently. Third, metacognitive practice: regular think-aloud exercises in class that train learners to monitor their own form-selection processes, identify habitual L1 interference patterns, and apply compensatory strategies.

7.2 Practical Recommendations

Teachers are advised to introduce aspectual categories using Vendler's (1967) classification, beginning with the stative/dynamic distinction, and to present progressive aspect as cognitively incompatible with stative predicates rather than as a rule to be

followed. Article instruction should be grounded in the conceptual opposition of definiteness versus indefiniteness, linked to learners' existing pragmatic knowledge of shared reference in Uzbek discourse. Curriculum developers should produce materials specifically designed for Uzbek-speaking learners that foreground the aspectual and article challenges documented in this study, and that integrate contrastive L1–L2 examples throughout.

Conclusion

This study has empirically demonstrated that conceptual difficulties persist across all proficiency levels among Uzbek-speaking learners of English, and that their primary source is the absence in Uzbek of grammatically encoded categories — aspectual distinctions and definiteness marking — that English systematically requires. The quantitative data establish the scope and distribution of these difficulties across CEFR levels; the qualitative TAP data illuminate the cognitive mechanisms — L1 mediation, rule retrieval failure, and developing contextual inference — through which these difficulties manifest in real-time production.

The findings show that form-focused instruction alone is insufficient to address these difficulties, and that a conceptual-metacognitive teaching approach is both theoretically motivated and practically necessary. The proposed CTA framework offers a principled way to supplement existing curricula by addressing L1 interference at the conceptual level where it originates.

Future research should pursue longitudinal designs to track conceptual development over extended time periods, comparative studies involving speakers of other agglutinative languages (Turkish, Kazakh, Azerbaijani), and experimental evaluation of CTA-informed instruction in controlled classroom settings. Ultimately, teaching a language means opening learners to new conceptual worlds — and for Uzbek-speaking learners of English, targeted conceptual instruction offers the most principled pathway to that destination.

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