

# Negation in Applied Linguistics Research Article Abstracts: Formal Realizations, Rhetorical Locations, and Discourse Functions

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## Research Article

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# Abstract

Negation is central to academic argument because it enables writers to establish unresolved problems, report nonconfirmation, and delimit empirical claims. This corpus study examined the formal realization, rhetorical location, qualification, and discourse functions of negation in 812 empirical research article abstracts (144,748 words) published in five applied linguistics journals between 2021 and 2026. Two researchers independently compiled 500-abstract samples using the same eligibility criteria; the samples were merged and 188 overlapping records were removed, yielding the final corpus. A closed, contextually validated lexicon identified 639 negative expressions (4.41 per 1,000 words) in 393 abstracts, while 129 lexicalized boundary items were excluded. Syntactic negation was most frequent (56.3%), followed by lexical (22.1%) and morphological negation (21.6%). Cluster-robust logistic regression showed that negation varied across rhetorical moves, Wald  $\chi^2(4) = 64.60$ ,  $p < .001$ . Product (7.10 per 1,000 words) and Introduction moves (5.32) showed the highest rates, whereas Purpose showed the lowest rate (1.70). Formal choices also displayed characteristic discourse affordances: syntactic forms denied or restricted propositions, morphological forms compressed evaluation into lexical characterization, and lexical forms specified absence, deficiency, failure, exclusion, avoidance, or prevention. Negation thus functions as a recurrent, rhetorically situated resource through which abstract writers construct disciplinary space and calibrate the evidential boundaries of their claims.

## 1. Introduction

Research article abstracts occupy a consequential position in scholarly communication. They condense the problem, purpose, methods, findings, and implications of an article into a short text that frequently determines whether readers retrieve the complete publication. This compression is not exclusively informational. Abstracts also establish the relevance of the research, represent the evidential value of its findings, and position the article within a disciplinary conversation. Research has consequently examined their move structures, evaluative language, stance, metadiscourse, and disciplinary variation (Bondi & Lorés Sanz, 2014; Gillaerts & Van de Velde, 2010; Hyland, 2000, 2004, 2009; Lorés, 2004; Pho, 2008; Santos, 1996). Competition for scholarly attention further intensifies the selective and promotional work of this genre (Hyland, 2023; Hyland & Jiang, 2021). These traditions demonstrate that an abstract is not a neutral inventory of article content but a selective argument about why the reported investigation and its results matter. Much of this argument is constructed through positive assertions about what a study examines, demonstrates, or contributes. Academic reasoning, however, also depends on identifying what remains unknown, rejecting what the evidence does not support, distinguishing what did not occur, and limiting what can be generalized. Negation is central to these operations. A writer can establish a niche by observing that a relationship has not been examined, report nonconfirmation by stating that an intervention did not improve performance, classify evidence as inconclusive, or restrict a generalization through *not all*. Such expressions do more than reverse affirmative propositions. They activate alternatives, position the writer in relation to expectations, and regulate the scope of the claim (Givón, 1978; Horn, 1989; Martin & White, 2005; Miestamo, 2005).

Negation has nevertheless received less sustained attention in academic-discourse research than hedging, boosting, evaluation, and authorial stance (Hu & Cao, 2011; Hyland, 1998, 2005a, 2005b; Hyland & Tse, 2005). The imbalance matters because negative meaning can be expressed through formally different resources. Clausal *not*, adjectival *unclear*, nominal *lack*, and modalized *may not* do not merely provide stylistic alternatives. They differ in grammatical scope, semantic specificity, epistemic force, and the kinds of rhetorical work they facilitate. Treating them as a single undifferentiated category can therefore conceal how research writers construct gaps, characterize conditions, and report limits on empirical outcomes. The present investigation develops a form-sensitive and move-sensitive account of negation in contemporary applied linguistics abstracts. It distinguishes syntactic, morphological, and lexical realization; examines where negative expressions occur within the Introduction, Purpose, Method, Product, and Conclusion moves; identifies how modal and evidential resources modify negative propositions; and relates formal choice to discourse function. This combination makes it possible to explain not only how frequently negation occurs but why particular forms are selected at different rhetorical locations.

## 1.1. Negation in academic discourse and research abstracts

Negation is semantically and grammatically heterogeneous. Descriptions of English commonly distinguish grammatical operators, negative morphology, and lexical expressions of absence or reversal (Biber et al., 1999; Dahl, 1979; Huddleston & Pullum, 2002; Jespersen, 1917; Quirk et al., 1985; Tottie, 1991). Syntactic negation includes markers such as *not*, *no*, *never*, *cannot*, *neither*, and *nor*. These forms can take scope over clauses, predicates, constituents, or quantified expressions. Morphological negation embeds negative, contrary, or reversative meaning within a lexical item, as in *unclear*, *inadequate*, *misalignment*, and productive *non-* formations. Lexical negation uses independent items such as *lack*, *absence*, *failure*, *without*, *avoid*, *exclude*, and *prevent* to specify absence, deficiency, nonachievement, exclusion, or prevention. The boundaries are not purely orthographic. Apparently negative initial strings in words such as *importance*, *individual*, and *discourse* do not realize negation, while some historically prefixed words are too lexicalized to support a compositional negative interpretation. Corpus identification must therefore combine retrieval rules with contextual validation. Formal differences affect discourse potential. Syntactic negation commonly denies a proposition or restricts its scope. Morphological negation can compress evaluation into a noun or adjective, allowing a writer to characterize evidence as *inconclusive*, an area as *unexplored*, or a relationship as *nonlinear* without constructing a separate negative clause. Lexical negation offers greater semantic specificity by naming the relevant form of absence or restriction. *A lack of evidence*, *the exclusion of participants*, and *the failure of a measure to predict performance* represent different negative relations even though all depart from an anticipated affirmative state. This differentiation is especially useful in abstracts, where limited space favors economical but precise formulations.

Negation is also relational and dialogic. A statement that an intervention did not improve fluency evokes an expectation that improvement was possible, predicted, or desired. A statement that not all contexts produced an effect counters a broader generalization while preserving part of it. A statement that evidence remains unclear evaluates the state of disciplinary knowledge and creates a warrant for inquiry. Negative propositions consequently interact with prior research, anticipated reader assumptions, theoretical predictions, and possible overgeneralizations (Horn, 1989; Martin & White, 2005). They can enable criticism without direct confrontation because the writer can reject a proposition, delimit its applicability, or replace it with an alternative rather than negatively evaluating another researcher.

Rhetorical location is likely to constrain these functions. Move research has shown that abstract language varies with communicative purpose because establishing a problem, announcing an objective, describing procedures, reporting findings, and extending implications impose different discourse demands (Hyland, 2000; Lorés, 2004; Pho, 2008; Santos, 1996). Introduction moves provide a natural environment for research-gap constructions such as *has not been investigated*, *remains unclear*, and *lack of evidence*. Product moves provide contexts for absent effects, unsupported hypotheses, unchanged patterns, and restricted generalizations. Purpose and Method moves principally announce and describe, although they can use negation to define exclusions, comparison conditions, or analytical boundaries. Conclusion moves may restrict implications or identify limitations, but many abstracts end with results and do not contain a separate conclusion. A move-sensitive analysis can therefore determine whether similar negative forms perform different rhetorical work at different points in the abstract.

The most extensive directly relevant study examined 4,126 instances of negation in diachronic corpora of biology, engineering, linguistics, and sociology abstracts (Jiang & Hyland, 2022). The analysis established that negation is a recurrent persuasive resource and showed disciplinary and historical variation in interpersonal uses. Cross-cultural work has also reported variation in negative markers across thesis and dissertation abstracts written in different linguistic contexts (Parviz & Zhang, 2025). These findings demonstrate that negation cannot be reduced to a marginal grammatical feature. They do not, however, resolve how its formal types are distributed across the rhetorical architecture of contemporary published applied linguistics abstracts or how grammatical form constrains local discourse function within this disciplinary domain.

Research on abstract rhetoric provides a basis for addressing this problem. Move analysis relates recurring discourse stages to their communicative purposes (Anthony, 1999; Biber et al., 2007; Kanoksilapatham, 2005; Samraj, 2005; Swales, 1990, 2004; Upton & Cohen, 2009), while corpus analysis allows formal patterns to be tested across a systematically constructed collection of texts (Biber et al., 1998; Biber & Conrad, 2009). Register and multidimensional research further demonstrates that linguistic features acquire functional significance through patterned distribution across texts and communicative settings rather than through frequency alone (Ansarifar et al., 2025; Biber, 1988, 1995, 2019; Friginal & Weigle, 2014; Hardy & Römer, 2013). A combined design can connect individual negative expressions to the rhetorical work of the sentence and the larger abstract. It also avoids assuming that frequency alone establishes functional importance. A form may be frequent because it efficiently labels

disciplinary entities, while a less frequent construction may be rhetorically salient because it explicitly rejects an expected finding.

Epistemic qualification requires particular attention. Academic writers calibrate commitment through modals, evidentials, hedges, and scope restrictors (Gillaerts & Van de Velde, 2010; Hu & Cao, 2011; Hyland, 1998, 2005a, 2005b). When these resources combine with negation, they affect what kind of negative claim is made. *May not generalize* presents limited generalizability as a possibility, whereas *does not generalize* makes a categorical assertion. *Might not be adequate* marks an evaluation as tentative. By contrast, *could not understand* typically represents constrained capability rather than epistemic uncertainty, despite containing a modal. A reliable account must therefore distinguish epistemic qualification from dynamic or ability meanings and from scope restriction in *not all*. Automated co-occurrence alone is insufficient because identical forms can express different modal meanings.

## 1.2. The current study

This study investigates negation in a deduplicated corpus of research article abstracts from five applied linguistics journals. Its contribution lies in connecting formal realization, rhetorical location, modal or evidential qualification, and discourse function within a single auditable design. A closed, contextually validated negation lexicon was used instead of unrestricted prefix searches, which produce false identifications when initial letter strings do not carry negative meaning. The relation between form and function was treated descriptively because some functions are partly enabled by the semantics of particular negators; for example, lexical items such as lack and absence inherently specify forms of absence or deficiency. This design makes it possible to examine where negation occurs and what rhetorical work its different realizations perform without treating grammar and discourse function as analytically independent.

Four research questions guided the analysis:

1. What are the frequencies and formal distributions of syntactic, morphological, and lexical negation in applied linguistics research article abstracts, once corpus construction and negation identification are made fully auditable?
2. How does the occurrence of negation vary across the rhetorical moves of the abstracts?
3. What do modal, evidential, and scope-restricting resources illustrate about how writers qualify negative propositions?
4. What discourse functions are characteristically realized by the three formal types of negation?

## 2. Method

## 2.1. Corpus construction

The corpus comprised 812 empirical research article abstracts published in *Applied Linguistics*, *English for Specific Purposes*, *Studies in Second Language Acquisition*, *System*, and the *International Journal of TESOL Studies*. The journals provided coverage of general applied linguistics, English for Specific and Academic Purposes, second language acquisition, language education, and TESOL. Two researchers independently compiled samples of 500 abstracts, with 100 selected from each journal in each round. For each journal, issues assigned to 2021–2026 were enumerated and placed in a randomized order; eligible articles were collected from the selected issues until the journal quota was reached. If the final issue contained more eligible articles than required, the remaining articles were randomly selected rather than taken by publication order. Both researchers applied the same eligibility criteria: the issue year rather than the online-first date determined inclusion, standard empirical articles with an English-language abstract of approximately 100 words or more were retained, and reviews, editorials, corrigenda, special-issue introductions, calls for papers, purely theoretical contributions, and texts without identifiable empirical analysis were excluded. Ambiguous cases were retained provisionally and flagged in the notes for review. The two samples were merged and deduplicated using normalized DOI values. In total, 187 records shared a DOI and one additional pair contained identical abstract text under DOI variants; removing these 188 overlaps yielded 812 unique abstracts. Thus, 37.6% of either independently assembled sample overlapped. When an article appeared in both samples, the record with the more complete audit trail was retained. Every final record was traceable to a DOI or article URL, and no abstract text was missing.

For each record, the published title, author information, year, volume and issue, DOI or article URL, abstract, collection date, collector initials, and any eligibility note were entered in the audit file. Abstracts were captured as plain text and retained word for word, including published spelling or grammatical irregularities. Before analysis, all texts were processed using one cleaning protocol that removed non-content section labels, residual markup, copyright or open-access boilerplate, and extraneous whitespace without rewriting the abstract itself. Corpus-level and move-level denominators were therefore derived from the same cleaned texts. The final corpus contained 144,748 words, with a mean abstract length of 178.26 words (SD = 34.64). Because random selection was conducted independently within journals and duplicate records were removed only after the samples were merged, the numbers of unique abstracts and words varied by journal. This imbalance reflects the observed overlap between the two independently randomized samples rather than post hoc quota adjustment. Journal identity was included to describe and statistically control the dataset, not to rank the venues or assume that each constituted an internally uniform discourse community. Table 1 presents the corpus composition.

**Table 1** *Descriptive Profile of the Corpus*

| Journal                                | Abstracts | Recorded words | Mean words | SD    |
|----------------------------------------|-----------|----------------|------------|-------|
| Applied Linguistics                    | 162       | 26,920         | 166.17     | 20.34 |
| English for Specific Purposes          | 156       | 29,181         | 187.06     | 34.62 |
| Studies in Second Language Acquisition | 157       | 24,746         | 157.62     | 26.80 |
| System                                 | 191       | 35,843         | 187.66     | 29.69 |
| International Journal of TESOL Studies | 146       | 28,058         | 192.18     | 44.98 |
| Total                                  | 812       | 144,748        | 178.26     | 34.64 |

## 2.2. Identification and classification of negation

Negation was classified into three mutually exclusive formal categories informed by descriptions of English negation (Biber et al., 1999; Huddleston & Pullum, 2002; Miestamo, 2005; Tottie, 1991), using a closed lexicon of validated surface forms rather than an open search (see 2.6 for the rationale).

Syntactic negation comprised nine defined forms: not (including contracted -n't), no, never, cannot, neither, nor, none, nothing, and nowhere. Seven were attested in the corpus; nothing and nowhere were not. Every match was retained with its sentence and inspected to exclude embedded strings and nonnegative uses.

Morphological negation included contextually transparent negative, contrary, or reversative formations with un-, in-, im-, dis-, mis-, and non-. Unrestricted prefix searches were not used, because strings such as in-, im-, and dis- retrieve large numbers of unrelated words, including instead, insight, impact, display, distribute, and discuss, each of which contains a dictionary word once the apparent prefix is removed without being negation. Candidate types were instead drawn from a closed lexicon of 102 forms with a synchronically interpretable negative or contrary meaning (e.g., unclear, inadequate, misalignment, inconsistent), built from forms independently attested in the corpus and reviewed for meaning; 66 of these forms were realized in the final corpus. Highly lexicalized items whose initial sequence does not contribute negative discourse meaning in context – disciplinary or demographic labels such as non-native, non-binary, disfluency, and miscommunication, and discourse connectives such as nonetheless – were treated as boundary items and excluded (2.6).

Lexical negation included independent expressions of absence, deficiency, failure, denial, avoidance, exclusion, or prevention. Recurrent lemma families included lack, without, absence, avoid, exclusion, failure, missing, deficit, and prevent. Inflectional variants were included when they retained the relevant meaning. An occurrence represented the individual negative expression; multiple forms in the same sentence were coded separately when each contributed identifiable negative meaning. Table 2 summarizes the operational classification and recurrent realizations used in the analysis.

**Table 2** *Operational Classification of Negation*

| Category            | Operational definition                                                                                                                                                      | Recurrent realizations                                                         | Examples                                                        |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Syntactic           | Negative meaning expressed through a grammatical particle, determiner, pronoun, or adverb; closed set of 9 defined forms, 7 attested                                        | not, no, cannot, nor, neither, never, none                                     | <i>did not differ; no effect</i>                                |
| Morphological       | Negative, contrary, or reversative meaning expressed within an attested lexical item; closed, validated lexicon of 102 forms, 66 attested                                   | un-, in-, im-, dis-, mis-, non- (validated forms only)                         | <i>unclear; inadequate; misalignment</i>                        |
| Lexical             | Absence, deficiency, failure, avoidance, exclusion, or prevention expressed by an independent lexical item; 9 validated lemma families                                      | lack, without, absence, avoid, exclusion, failure, missing, deficit, prevent   | <i>lack of evidence; without support</i>                        |
| Excluded (boundary) | Item matches a negation-like surface pattern but names a conventional disciplinary, demographic, or technical category rather than performing discourse negation in context | non-native, non-binary, disfluency, miscommunication, uncertainty, nonetheless | <i>non-native English speakers; sources of miscommunication</i> |

## 2.3. Rhetorical-move coding

Sentences were assigned to the five-move model of Introduction, Purpose, Method, Product, and Conclusion. Introduction sentences established the topic, reviewed prior research, identified a problem, or created a research gap. Purpose sentences announced an aim, question, or analytical objective. Method sentences described participants, corpora, instruments, procedures, or analysis. Product sentences reported findings. Conclusion sentences extended implications, contributions, recommendations, or limitations.

Sentences were assigned to the five-move model using a supervised text classifier based on multinomial logistic regression with word unigrams, bigrams, and sentence position within the abstract. Sentence boundaries were identified with an abbreviation-aware splitter that protected forms such as e.g., i.e., cf., and et al. from being treated as sentence-final. Five-fold cross-validation on 2,972 coded sentences produced 74.9% accuracy and a macro-F1 of .73. Performance was strongest for Introduction (F1 = .85), while Purpose (F1 = .59) was the smallest and most locally variable class. The classifier was then applied uniformly to the complete corpus of 5,628 sentences, providing a consistent and reproducible basis for corpus-wide move assignment.

## 2.4. Modal, evidential, and scope qualification

Negative expressions were examined for direct combination with resources that modified commitment, evidential status, or scope. Epistemic constructions included *may not*, *might not*, negative propositions governed by *appear* or *seem*, and morphologically negative probability expressions such as *unlikely*. The operational distinction followed the treatment of stance as the grammatical and lexical expression of commitment, attitude, and evidential positioning (Hyland, 2005a, 2005b). *Dynamic could not* was coded separately because the corpus occurrences principally represented inability or constrained analytical coverage rather than epistemic possibility. Scope restrictors such as *not all* and *neither...nor* were also distinguished because they preserved part of an affirmative proposition while denying universal applicability. Only 32 of the 639 occurrences (5.0%) received a qualification code; these patterns were therefore interpreted qualitatively rather than used to support a separate distributional claim.

Classification was based on the grammatical relation within the clause rather than the mere presence of a modal or evidential elsewhere in the sentence. This prevented a negative expression from being labelled epistemically qualified simply because the surrounding sentence contained *suggest* or *may* in relation to another proposition. Representative cases were inspected in their complete abstract to establish the local interpretation.

## 2.5. Functional analysis

Discourse function was assigned from the complete sentence and its rhetorical context. The scheme distinguished research gap or unresolved issue; lexical characterization; proposition-level denial or restriction; contrast or qualification; null or nonconfirmatory finding; absence or deficiency; exclusion, avoidance, or prevention; and failure or nonconfirmation. A second supervised classifier, based on multinomial logistic regression over the occurrence form, formal category, and surrounding sentence, was trained and five-fold cross-validated on 395 coded occurrences. Cross-validation produced 70.4% accuracy and a macro-F1 of .69, with particularly strong performance for absence or deficiency (F1 = .84) and lexical characterization (F1 = .84). The categories were used to describe the characteristic work of each form rather than to claim that form and function were independent. Functional profiles were consequently reported through frequencies, contextual interpretation, and representative examples.

## 2.6. Coding reliability and validation

Coding reliability was evaluated at complementary levels. First, five-fold cross-validation assessed the reproducibility of the rhetorical-move and discourse-function classifiers (move accuracy = 74.9%, macro-F1 = .73,  $n = 2,972$  sentences; function accuracy = 70.4%, macro-F1 = .69,  $n = 395$  occurrences). Second, one researcher independently coded a blinded subsample comprising 37 syntactic occurrences and 16 boundary candidates. The researcher used only the sentence context and operational definitions and did not consult the primary codes during this process. Agreement for excluding lexicalized boundary items

was 93.8% (15 of 16). Agreement for syntactic discourse function was 45.9% at the full eight-category resolution ( $\kappa = .27$ ) and 83.8% when the closely related categories of contrast or qualification, proposition-level denial or restriction, and null or nonconfirmatory finding were consolidated. Together, these results supported reliable identification and showed that broader functional distinctions were consistently recoverable across coding procedures.

The complementary validation procedures supported the stability of occurrence identification, boundary exclusion, and broader functional interpretation. Functional profiles were reported descriptively and accompanied by contextual examples so that category assignments remained directly inspectable. All candidate expressions were retained with their sentence contexts, character offsets, inclusion decisions, formal categories, functions, and qualification codes in the analysis record.

## 2.7. Statistical analysis

Raw frequencies, percentages, rates per 1,000 recorded words, and abstract coverage were calculated from the cleaned corpus. Move-level variation was examined using sentence prevalence and normalized frequency. Because sentences were nested within abstracts, the association between rhetorical move and the presence of at least one negative expression in a sentence was assessed using logistic regression with cluster-robust standard errors at the abstract level. Journal was entered as a covariate, Introduction served as the reference move, and a Wald test evaluated the joint significance of the move terms. Statistical tests were two-tailed with  $\alpha = .05$ .

## 3. Results

### 3.1. Overall frequency and formal realization

The closed-lexicon audit identified 639 negative expressions, corresponding to 4.41 occurrences per 1,000 recorded words. At least one occurrence appeared in 393 abstracts, producing corpus coverage of 48.4%. Syntactic negation was most frequent, with 360 occurrences (56.3% of the total); lexical negation accounted for 141 occurrences (22.1%), and morphological negation for 138 (21.6%). A further 129 candidate items — headed by non-native/nonnative (28 occurrences), uncertainty (9), miscommunication (8), non-binary (7), and nonverbal/non-verbal (11) — were identified by the same procedure but excluded as lexicalized disciplinary or demographic labels rather than instances of discourse negation, following the boundary-exclusion rule in 2.2 and 2.6; these items are listed in full in the accompanying coding workbook. Table 3 shows that the reach of negation did not result from dense repetition in every abstract. Instead, one or a small number of strategically located negative expressions occurred in just under half of the corpus.

Table 3  
Overall Distribution of Negation

| Formal type   | Frequency | Percentage | Per 1,000 words |
|---------------|-----------|------------|-----------------|
| Syntactic     | 360       | 56.3       | 2.49            |
| Lexical       | 141       | 22.1       | 0.97            |
| Morphological | 138       | 21.6       | 0.95            |
| Total         | 639       | 100.0      | 4.41            |

The categories differed in recurrent realizations. Not accounted for 258 syntactic occurrences and no for 78, with cannot (7), nor (5), neither (5), never (4), and none (3) realizing the remainder of the closed syntactic set. Frequent lexical items included lack and its inflections (59 occurrences), without (30), absence and absent (10), avoid and its inflections (13), and failure and its inflections (10). Morphological negation was lexically diverse: 138 occurrences realized 66 distinct forms, most frequently unclear, insufficient, inadequate, inconsistent, and unexpected. Its frequency therefore arose from a broad inventory rather than domination by one word. Representative corpus realizations are provided in Table 4.

Table 4  
Representative Formal Realizations

| Type          | Corpus example                                                                                                                                        | Local function                                                 |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Morphological | However, the evidence base for such practices <b>is unclear</b> .                                                                                     | Marks the evidential status of prior practice as unresolved    |
|               | Yet, the potential value of podcasts as EAP resources remains largely <b>unexplored</b> .                                                             | Frames an underexamined area as a research gap                 |
| Syntactic     | However, <b>no research</b> to date has examined the impact of implicit/explicit instruction on learners' fluency.                                    | Establishes a research gap through a negated existential claim |
|               | Adults were more accurate than children, but training condition <b>did not significantly affect</b> accuracy.                                         | Reports a nonconfirmatory result                               |
| Lexical       | Oral presentations in English are emphasized in higher education, yet verbal and visual communication often <b>lack balance</b> in academic training. | Specifies deficiency                                           |
|               | For each of the 46 studies which met <b>inclusion/exclusion</b> criteria, we randomly selected a control article from the same journals.              | Names a methodological exclusion criterion                     |

## 3.2. Distribution across rhetorical moves

Product contained the highest normalized rate of negation at 7.10 occurrences per 1,000 words, followed by Introduction at 5.32. Method (3.67) and Conclusion (3.17) were intermediate, and Purpose was lowest at 1.70. Sentence prevalence displayed a similar ordering: 15.70% of Product sentences and 12.49% of Introduction sentences contained negation, compared with 4.82%–8.64% across the other moves. A cluster-robust logistic regression (sentences clustered by abstract, journal entered as a covariate, Introduction as the reference move) confirmed that rhetorical move was jointly associated with the presence of negation, Wald  $\chi^2(4) = 64.60$ ,  $p < .001$ . Relative to Introduction, the odds of negation were lower in Purpose (OR = 0.35, 95% CI [0.22, 0.56],  $p < .001$ ), lower in Method (OR = 0.66, 95% CI [0.51, 0.86],  $p = .002$ ), lower in Conclusion (OR = 0.60, 95% CI [0.44, 0.81],  $p < .001$ ), and marginally higher, though not reliably so, in Product (OR = 1.27, 95% CI [0.99, 1.64],  $p = .061$ ). Journal was a weaker predictor: only one contrast (Journal 2 versus Journal 1, OR = 0.73,  $p = .047$ ) reached conventional significance. Move location therefore influenced the probability of negation, over and above ordinary between-abstract variation, without determining it. Table 5 summarizes the distribution of negation across the five rhetorical moves.

Table 5  
*Distribution of Negation Across Rhetorical Moves*

| Move         | Sentences | Words  | Sentences with negation | Sentence prevalence (%) | Negation per 1,000 words |
|--------------|-----------|--------|-------------------------|-------------------------|--------------------------|
| Introduction | 929       | 23,321 | 116                     | 12.49                   | 5.32                     |
| Purpose      | 436       | 12,378 | 21                      | 4.82                    | 1.70                     |
| Method       | 2,177     | 56,110 | 188                     | 8.64                    | 3.67                     |
| Product      | 1,210     | 30,557 | 190                     | 15.70                   | 7.10                     |
| Conclusion   | 876       | 22,382 | 68                      | 7.76                    | 3.17                     |

The quantitative concentration in Product and Introduction masked a functional difference. Introduction negation constructed the problem that warranted the investigation: it identified unavailable evidence, unresolved relationships, or methods that had not been applied. Product negation represented what the analysis did not confirm, what remained unchanged, or where a finding required restriction. Purpose used negation the least, consistent with its role in stating an affirmative aim rather than delimiting a problem or a finding; Method used negation more locally to define analytical boundaries, comparison conditions, or excluded elements. Conclusion negation was intermediate in rate: some abstracts closed by restating a limitation or an unresolved implication in negative terms, while many others favored affirmative contribution statements. Table 6 illustrates these move-conditioned uses with representative corpus examples.

Table 6  
Move-Conditioned Uses of Negation

| Move         | Corpus example                                                                                                                                                                   | Rhetorical function                     |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Introduction | However, research in this area is <b>scarce</b> , existing tools <b>have not been validated</b> in different contexts, and <b>no cross-country comparisons</b> have been made.   | Establishes an unresolved issue         |
|              | However, the evidence base for such practices <b>is unclear</b> .                                                                                                                | Identifies a research gap               |
| Product      | Adults and explicit groups developed more explicit knowledge than children and implicit groups, with <b>no interactions</b> between age and training condition.                  | Reports absent relationship             |
|              | Adults were more accurate than children, but training condition <b>did not significantly affect</b> accuracy.                                                                    | Reports a nonconfirmatory result        |
| Method       | In conventional listening tests, they are <b>not directly assessed</b> .                                                                                                         | Defines a methodological property       |
| Conclusion   | The observed congruence of directly and indirectly elicited attitudes suggests that changes put forth in language curricula <b>have not influenced</b> language attitudes (yet). | Preserves a nonconfirmatory implication |

### 3.3. Modal, evidential, and scope qualification

Epistemically and evidentially qualified negation was a focused pattern rather than a general latent dimension of the corpus, occurring in 32 of 639 occurrences (5.0%); it is reported here illustratively rather than as a separate distributional finding (Section 2.4). Nine occurrences of may not or might not directly calibrated negative propositions, and two occurrences combined an evidential verb (appear, seem) with no or not. These forms typically limited generalizability, questioned adequacy, or presented absence as an evidence-based interpretation rather than a categorical fact.

Seven occurrences of cannot or could not differed functionally: most represented constrained capability (e.g., a construct that cannot be properly assessed by a given method), and one represented incomplete analytical coverage (a framework that could not account for all aspects of a phenomenon). These cases contain modal negation but do not all express epistemic uncertainty. Fourteen occurrences of not all, neither...nor, or a comparable construction performed scope restriction by rejecting universal applicability while leaving a subset of the affirmative proposition intact. Table 7 illustrates these distinctions with corpus examples.

Table 7  
*Qualified and Restricted Negative Propositions*

| Construction              | Corpus example                                                                                                                                                         | Interpretation                               |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>may not</b>            | Academic (re)theorizations of language <b>may not always</b> bring about changes to the material spatiotemporal conditions of marginalized stakeholders.               | Epistemically limits the anticipated effect  |
| <b>might not</b>          | The findings suggested that TE-GELT, with the content-focused approach alone, <b>might not be adequate</b> to create lasting effects on teachers' classroom practices. | Tentatively evaluates adequacy               |
| <b>cannot / could not</b> | Thus, such constructs <b>cannot be properly assessed</b> by confirmatory factor analysis (CFA).                                                                        | Represents constrained capability            |
| <b>could not</b>          | It <b>could not account</b> for all aspects relating to online learning, such as the need for pastoral care.                                                           | Represents limited analytical coverage       |
| <b>not all</b>            | On the other hand, <b>not all</b> the teaching strategies suggested in the module were fully grasped for potential future use by the PSTs.                             | Restricts universal scope                    |
| <b>neither...nor</b>      | Results revealed that <b>neither syntactic nor semantic</b> knowledge was adequately mastered by learners.                                                             | Restricts scope across two coordinated terms |

The pattern demonstrates why modal counts require contextual interpretation. May not and might not calibrated commitment to a negative proposition, whereas cannot and could not primarily encoded ability or analytical sufficiency. Not all and neither...nor did not weaken certainty in the same way; they altered quantificational scope. These constructions all moderate the reach of an affirmative expectation, but they do so through different grammatical mechanisms, which is why the pattern is reported qualitatively rather than treated as a single distributional category.

### 3.4. Functional differentiation of formal types

Morphological negation predominantly characterized entities, conditions, processes, and relationships. Of 138 occurrences, 105 were coded as lexical characterization, 15 contributed directly to a research gap or unresolved issue, and 18 occurred within an explicit contrast or qualification. Forms such as unclear, inconsistent, nonstandard, non-conventional, and inadequate compressed a negative assessment into the lexical description of the research object.

Syntactic negation operated primarily at proposition level. Of 360 occurrences, 177 formed part of a contrast or qualification, 154 denied or restricted another proposition, 28 explicitly reported a null or nonconfirmatory finding, and one directly constructed a research gap. This profile reflects the broad scope of not and no: they could reject an expected relationship, correct an assumption, contrast two outcomes, or prevent universal interpretation. An independent reading of a subsample of these occurrences agreed with the primary function label in 45.9% of cases at this eight-category resolution ( $\kappa = .27$ , fair agreement) and in 83.8% of cases once contrast/qualification, proposition-level denial/restriction, and null/nonconfirmatory finding were collapsed into a single broad category,

indicating that these three categories are the main source of disagreement and would benefit from tighter definitions in future coding rounds (2.6).

Lexical negation provided semantically specific representations of negative states and processes. Of 141 occurrences, 97 expressed absence or deficiency, 20 occurred within a contrast or qualification, 18 expressed exclusion, avoidance, or prevention, and 6 represented failure or nonconfirmation. Items such as lack, absence, without, avoid, and exclusion specified the relevant form of absence or restriction more precisely than a general grammatical operator. Table 8 summarizes the functional profiles of the three formal types.

Table 8  
*Functional Profiles of the Three Formal Types*

| Formal type   | Principal functions                                                                 | Frequency pattern                                                                                        |
|---------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Morphological | Lexical characterization; contrast/qualification; unresolved status                 | 105 characterization; 18 contrast/qualification; 15 gap/unresolved (n = 138)                             |
| Syntactic     | Contrast/qualification; proposition-level denial; null-result reporting             | 177 contrast/qualification; 154 denial/restriction; 28 nonconfirmatory; 1 gap (n = 360)                  |
| Lexical       | Absence/deficiency; contrast/qualification; exclusion/avoidance/prevention; failure | 97 absence/deficiency; 20 contrast/qualification; 18 exclusion/avoidance/prevention; 6 failure (n = 141) |

These profiles do not imply that a grammatical category mechanically determines discourse function. Context can redirect a form, and individual sentences can contain more than one negative relation. The profiles instead demonstrate recurrent form–function affordances across the corpus. Morphology efficiently labels, syntactic negation takes scope over propositions, and lexical negators specify the semantic nature of absence or restriction.

## 4. Discussion

The study examined the frequency, form, rhetorical location, qualification, and function of negation in 812 applied linguistics research article abstracts. Five findings organize the discussion. Negation occurred in just under half of the abstracts after lexicalized disciplinary and demographic labels were excluded. Syntactic negation was the largest formal category, followed by lexical and morphological negation. Product and Introduction moves contained the highest rates when textual clustering was taken into account, but they used negation for different rhetorical purposes. Modalized and scope-restricted constructions formed a small yet informative pattern. Finally, the functional profiles demonstrated systematic relationships between formal realization and rhetorical work.

### 4.1. Negation as a recurrent and differentiated resource

The coverage rate of 48.4% establishes negation as a recurrent, though not universal, feature of applied linguistics abstracts. Its normalized frequency of 4.41 occurrences per 1,000 words is not high enough to dominate the texts, but frequency alone understates rhetorical reach. Most abstracts did not repeat negative expressions densely; instead, a small number of strategically placed forms identified a gap, reported nonconfirmation, distinguished outcomes, or delimited a conclusion. This pattern supports the argument that negation contributes materially to abstract persuasion (Jiang & Hyland, 2022) and challenges any assumption that effective abstracts are organized principally through affirmative reporting. Syntactic negation accounted for over half of the included occurrences after lexicalized items such as non-native, non-binary, disfluency, and miscommunication were excluded from the morphological category. This result demonstrates that claims about the predominance of a formal type depend on semantically defensible inclusion boundaries.

The finding also demonstrates why unrestricted prefix retrieval is methodologically unsafe. Academic abstracts contain numerous words beginning with in-, im-, dis-, and un- that have no negative compositional meaning, including instead, insight, impact, display, distribute, and discuss. A further set of un-, in-, and non- forms is better described as lexicalized disciplinary or demographic terminology than as active discourse negation. Non-native and nonnative alone accounted for 28 of the 129 excluded boundary items, followed by uncertainty, miscommunication, and non-binary. Treating every initial string or every boundary item as a negative form would inflate morphological counts and obscure the relationship between form and meaning. Morphological negation, when restricted by contextual criteria, was lexically diverse but proportionally smaller than syntactic negation. Syntactic negation was less lexically diverse but rhetorically expansive: not and no could deny propositions, restrict quantification, correct assumptions, and contrast results. Lexical negation was least frequent but most semantically explicit because lack, without, failure, avoidance, and exclusion named the relevant negative relation. The categories are therefore not interchangeable counts of one phenomenon; each provides distinct resources for organizing scholarly claims.

## 4.2. Rhetorical location and the dual work of negation

Negation was concentrated in Product and Introduction moves after sentence clustering within abstracts was taken into account, Wald  $\chi^2(4) = 64.60$ ,  $p < .001$ . This pattern is theoretically useful because it shows that rhetorical organization conditions negation without reducing it to a move-specific marker. Negative expressions remain possible throughout an abstract, but Introduction and Product create particularly strong communicative reasons for their use. Introduction negation transforms insufficiency into research space. A relationship that remains unclear, evidence that is lacking, or a method that has not been used provides a compact warrant for investigation. In a full introduction, writers can establish a niche through extended review and citation; an abstract must often accomplish the same transition within one clause. Negation offers an efficient means of moving from the state of knowledge to the need for the study, consistent with genre accounts of niche establishment (Swales, 1990, 2004). Purpose showed the lowest rate (1.70 per 1,000 words), consistent with its primary role in stating an affirmative aim rather than delimiting a problem or result.

Product negation reports the boundaries of confirmation. Writers stated that predicted effects did not emerge, variables were not associated, patterns remained unchanged, or positive outcomes did not extend to every component. Such statements are not rhetorically deficient results; they can differentiate mechanisms, delimit pedagogical effectiveness, or challenge expectations. Their high frequency in Product demonstrates that applied linguistics abstracts do not exclusively select positive outcomes, although the corpus cannot establish what was omitted from the full articles. The near concentration of Introduction and Product does not mean that they perform the same function. Introduction looks backward to unresolved disciplinary knowledge; Product looks inward to the results of the reported analysis. The first constructs necessity, while the second establishes evidential boundaries. Similar surface forms can participate in both tasks, but their rhetorical force depends on location.

### 4.3. Calibrating negative propositions

The qualification patterns, although limited to 5.0% of occurrences, clarify how writers regulate the force and scope of negative claims. May not and might not retained a negative proposition while presenting it as conditional or open to further evaluation. These constructions align with the broader role of hedging in matching commitment to evidence and anticipating reader response (Gillaerts & Van de Velde, 2010; Hu & Cao, 2011; Hyland, 1998, 2005a, 2005b). The distinction between epistemic and dynamic modality remained essential: *could not understand* represented inability, whereas *could not account for all aspects* represented limited analytical coverage. Treating both automatically as epistemically hedged negation would collapse distinct meanings. Likewise, *not all* and *neither...nor* restricted scope rather than certainty. The findings therefore reinforce a methodological principle for corpus studies of stance: co-occurrence can identify candidates, but grammatical relation and contextual interpretation are necessary when a category depends on scope.

### 4.4. Functional specialization and implications for academic writing

The functional profiles show how grammatical form contributes to rhetorical choice. Morphological negation integrates evaluation into lexical characterization. Syntactic negation makes an affirmative alternative available for denial, correction, contrast, or restriction. Lexical negation identifies the specific negative relation as absence, deficiency, failure, exclusion, avoidance, or prevention. This form–function distinction extends the interpersonal account of abstract negation by showing how formal realization affords different types of disciplinary work (Jiang & Hyland, 2022). The pedagogical implication is not that writers should increase or avoid negative language; generic warnings against negativity obscure its role in precision and argumentation. Writers need to understand the scope and force of available forms. Unexplored can condense a research gap, but it should not replace a substantiated account of the literature. *Did not improve* makes a strong proposition-level claim and requires appropriate evidential support. *No significant difference* reports a statistical decision but does not demonstrate equivalence. **May not generalize** is appropriate when evidence suggests a boundary but remains insufficient for a categorical conclusion. Instruction can therefore connect formal alternatives to rhetorical purpose and use corpus examples to show how Introduction and Product moves employ negation differently.

## 5. Conclusion

Negation is a recurrent and functionally differentiated component of applied linguistics research article abstracts. The analysis identified 639 negative expressions in 812 deduplicated abstracts (144,748 words), with at least one expression occurring in 48.4% of the corpus. Syntactic negation was most frequent, followed by lexical and morphological negation. Product and Introduction contained the highest normalized rates in the cluster-robust analysis, although their rhetorical uses differed: Introduction negation constructed unresolved disciplinary space, whereas Product negation reported nonconfirmation and empirical boundaries. Formal categories also provided different argumentative affordances. Morphological negation economically characterized entities, conditions, and relationships; syntactic negation operated over propositions and supported denial, contrast, qualification, and nonconfirmatory reporting; and lexical negation specified absence, deficiency, exclusion, avoidance, prevention, and failure. Modalized and scope-restricted constructions further demonstrated that negative propositions varied in commitment and applicability, although their limited frequency supported qualitative rather than distributional interpretation.

The study is limited to five journals and a six-year publication window, and its claims should therefore remain bounded to the sampled venues and period. The unequal journal totals resulted from independent within-journal sampling followed by duplicate removal and should not be interpreted as proportional representation of the wider field. The analysis was also restricted to abstracts and cannot determine how negative findings or limitations were represented in full articles. Further research could compare abstracts with full texts, examine diachronic development, and test how readers interpret categorical, modalized, and scope-restricted negative claims. Within these boundaries, the findings show that negation is integral to abstract rhetoric: it helps writers establish what is missing, reject what is unsupported, specify what failed or was prevented, and delimit what the evidence permits them to claim.

## Declarations

### Ethics declaration

Ethics approval was not required for this corpus study because it analyzed publicly available research article abstracts and involved no human participants, recruitment, intervention, or collection of identifiable private data. Therefore, no ethics committee reviewed or approved the study, and participant consent was not applicable. The study followed applicable research-integrity principles for the transparent collection, coding, analysis, and reporting of published scholarly materials.

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### Availability of data and materials

The data analyzed in this study consist of publicly available research article abstracts. The corpus construction procedures and analytical framework are reported in the manuscript. The dataset and coding materials may be obtained from the corresponding author upon reasonable request after publication.

### **Competing interests**

The authors declare that they have no competing interests.

### **Authors' contributions**

IX: Conceptualization, Methodology, Formal analysis, Visualization, Project administration, Supervision, Writing - original draft, Writing - review and editing. M.M.Z: Investigation, Data curation, Methodology, Formal analysis. AQ: Conceptualization, Investigation, Data curation, Writing - original draft, Writing - review and editing. LG: Investigation, Data curation, Validation, Writing - review and editing. All authors read and approved the final manuscript.

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## **References**

1. Ansarifar A, Shahriari H, Staples S, Ghazanfari M (2025) Linguistic variation in two written academic sub-registers: A multi-dimensional analysis. *Revista Española de Lingüística Aplicada/Spanish J Appl Linguistics* 38(1):162–191. <https://doi.org/10.1075/resla.22052.ans>
2. Anthony L (1999) Writing research article introductions in software engineering: How accurate is a standard model? *IEEE Trans Prof Commun* 42(1):38–46. <https://doi.org/10.1109/47.749366>
3. Biber D (1988) *Variation across speech and writing*. Cambridge University Press
4. Biber D (1995) *Dimensions of register variation: A cross-linguistic comparison*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511519871>
5. Biber D (2019) Text-linguistic approaches to register variation. *Register Stud* 1(1):42–75. <https://doi.org/10.1075/rs.18007.bib>
6. Biber D, Conrad S (2009) *Register, genre, and style*. Cambridge University Press
7. Biber D, Conrad S, Reppen R (1998) *Corpus linguistics: Investigating language structure and use*. Cambridge University Press
8. Biber D, Connor U, Upton TA (eds) (2007) *Discourse on the move: Using corpus analysis to describe discourse structure*. John Benjamins
9. Biber D, Johansson S, Leech G, Conrad S, Finegan E (1999) *Longman grammar of spoken and written English*. Longman

10. Bondi M, Lorés Sanz R (eds) (2014) Abstracts in academic discourse: Variation and change. Peter Lang
11. Dahl Ö (1979) Typology of sentence negation. *Linguistics* 17(1–2):79–106.  
<https://doi.org/10.1515/ling.1979.17.1-2.79>
12. Friginal E, Weigle SC (2014) Exploring multiple profiles of L2 writing using multi-dimensional analysis. *J Second Lang Writ* 26:80–95. <https://doi.org/10.1016/j.jslw.2014.09.007>
13. Gillaerts P, Van de Velde F (2010) Interactional metadiscourse in research article abstracts. *J Engl Acad Purp* 9(2):128–139. <https://doi.org/10.1016/j.jeap.2010.02.004>
14. Givón T (1978) Negation in language: Pragmatics, function, ontology. In: Cole P (ed) *Syntax and semantics: Pragmatics*, vol 9. Academic, pp 69–112
15. Hardy JA, Römer U (2013) Revealing disciplinary variation in student writing: A multi-dimensional analysis of the Michigan Corpus of Upper-Level Student Papers. *Corpora* 8(2):183–207
16. Horn LR (1989) *A natural history of negation*. University of Chicago Press
17. Hu G, Cao F (2011) Hedging and boosting in abstracts of applied linguistics articles: A comparative study of English- and Chinese-medium journals. *J Pragmat* 43(11):2795–2809.  
<https://doi.org/10.1016/j.pragma.2011.04.007>
18. Huddleston R, Pullum GK (2002) *The Cambridge grammar of the English language*. Cambridge University Press
19. Hyland K (1998) Boosting, hedging and the negotiation of academic knowledge. *Text* 18(3):349–382. <https://doi.org/10.1515/text.1.1998.18.3.349>
20. Hyland K (2000) *Disciplinary discourses: Social interactions in academic writing*. Longman
21. Hyland K (2004) Disciplinary interactions: Metadiscourse in L2 postgraduate writing. *J Second Lang Writ* 13(2):133–151. <https://doi.org/10.1016/j.jslw.2004.02.001>
22. Hyland K (2005a) *Metadiscourse: Exploring interaction in writing*. Continuum
23. Hyland K (2005b) Stance and engagement: A model of interaction in academic discourse. *Discourse Stud* 7(2):173–192. <https://doi.org/10.1177/1461445605050365>
24. Hyland K (2009) *Academic discourse: English in a global context*. Continuum
25. Hyland K (2023) Academic publishing and the attention economy. *J Engl Acad Purp* 64 Article 101253. <https://doi.org/10.1016/j.jeap.2023.101253>
26. Hyland K, Jiang FK (2021) Our striking results demonstrate ... Persuasion and the growth of academic hype. *J Pragmat* 182:189–202. <https://doi.org/10.1016/j.pragma.2021.06.018>
27. Hyland K, Tse P (2005) Hooking the reader: A corpus study of evaluative that in abstracts. *Engl Specif Purp* 24(2):123–139. <https://doi.org/10.1016/j.esp.2004.02.002>
28. Jespersen O (1917) *Negation in English and other languages*. A. F. Høst
29. Jiang FK, Hyland K (2022) The datasets do not agree: Negation in research abstracts. *Engl Specif Purp* 68:60–72. <https://doi.org/10.1016/j.esp.2022.06.003>

30. Kanoksilapatham B (2005) Rhetorical structure of biochemistry research articles. *Engl Specif Purp* 24(3):269–292. <https://doi.org/10.1016/j.esp.2004.08.003>
31. Lorés R (2004) On RA abstracts: From rhetorical structure to thematic organisation. *Engl Specif Purp* 23(3):280–302. <https://doi.org/10.1016/j.esp.2003.06.001>
32. Martin JR, White PRR (2005) *The language of evaluation: Appraisal in English*. Palgrave Macmillan
33. Miestamo M (2005) Standard negation: The negation of declarative verbal main clauses in a typological perspective. Mouton de Gruyter
34. Parviz M, Zhang Q (2025) Negation in thesis and dissertation abstracts by English, Chinese, and Iranian writers from a cross-cultural perspective. *Russian Journal of Linguistics*, 29(3), 513–537. <https://doi.org/10.22363/2687-0088-42981>
35. Pho PD (2008) Research article abstracts in applied linguistics and educational technology: A study of linguistic realizations of rhetorical structure and authorial stance. *Discourse Stud* 10(2):231–250. <https://doi.org/10.1177/1461445607087010>
36. Quirk R, Greenbaum S, Leech G, Svartvik J (1985) *A comprehensive grammar of the English language*. Longman
37. Samraj B (2005) An exploration of a genre set: Research article abstracts and introductions in two disciplines. *Engl Specif Purp* 24(2):141–156. <https://doi.org/10.1016/j.esp.2003.09.001>
38. Santos MBD (1996) The textual organization of research paper abstracts in applied linguistics. *Text* 16(4):481–500. <https://doi.org/10.1515/text.1.1996.16.4.481>
39. Swales JM (1990) *Genre analysis: English in academic and research settings*. Cambridge University Press
40. Swales JM (2004) *Research genres: Explorations and applications*. Cambridge University Press
41. Tottie G (1991) *Negation in English speech and writing: A study in variation*. Academic
42. Upton TA, Cohen MA (2009) An approach to corpus-based discourse analysis: The move analysis as example. *Discourse Stud* 11(5):585–605. <https://doi.org/10.1177/1461445609341006>