

Digital Bilingual Integration: Structural and Syntactic Patterns of Intra-Sentential Code-Switching in Indonesian–English Twitter Discourse

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ABSTRACT

This study examines the structural and syntactic patterns of intra-sentential code-switching in Indonesian–English bilingual discourse on Twitter within the framework of digital multilingualism. Adopting a qualitative research design, the study employs qualitative content analysis to investigate naturally occurring language use in online communication. A total of 100 bilingual utterances were purposively selected based on the presence of intra-sentential code-switching. The analysis focuses on three interconnected dimensions: the types of switching structures, the positional distribution within sentences, and the syntactic categories involved. The findings reveal that insertion-based switching at the phrase level is the most dominant pattern, particularly in the form of adjective, verb, and noun phrase insertions, indicating that bilingual speakers tend to embed English elements within Indonesian grammatical structures rather than switching across larger syntactic units. In terms of positional distribution, code-switching occurs predominantly in the middle of sentences, reflecting a high degree of syntactic integration and fluency in bilingual language use. Furthermore, the distribution of syntactic categories shows that adjective phrases are the most frequent, followed by verb phrases and noun phrases, highlighting the role of English as an expressive and functional linguistic resource in digital discourse. Overall, the findings demonstrate that intra-sentential code-switching is not random but represents a systematic and structured linguistic practice. This study introduces the concept of Digital Bilingual Integration to explain how Indonesian functions as the matrix language while English elements are strategically embedded to enhance communicative effectiveness, stylistic expression, and identity construction in online interaction.

KEYWORDS

Code switching, digital multilingualism, intra-sentential switching, twitter discourse, bilingual communication

ABSTRAK

Studi kualitatif ini menyelidiki bagaimana mahasiswa mengekspresikan stres akademis mereka melalui komentar TikTok. Menggunakan analisis konten, sepuluh komentar dipilih dari tiga video viral terkait perjuangan mahasiswa. Komentar-komentar tersebut dikelompokkan ke dalam empat tema utama: kebingungan akademis, tekanan emosional, motivasi terkait keluarga, dan perasaan terisolasi. Meskipun singkat dan informal, komentar-komentar tersebut mengungkapkan masalah yang lebih dalam seperti kelelahan, kurangnya dukungan, dan kelelahan psikologis. Temuan tersebut menyoroti bahwa mahasiswa sering menggunakan media sosial sebagai pelampiasan

KATA KUNCI

Alih kode, multilingualisme digital, alih kode intra kalimat, wacana twitter, komunikasi bilingual

emosi, menjadikan TikTok sebagai ruang yang berharga untuk memahami suara mahasiswa. Studi ini mendorong para pendidik untuk lebih memperhatikan ekspresi daring karena hal tersebut mencerminkan pengalaman akademis dan emosional yang nyata

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INTRODUCTION

Code-switching, commonly defined as the alternation between two or more languages within a single discourse, has become an increasingly visible linguistic practice in the context of global multilingualism. In digitally mediated communication, particularly on social media platforms such as Twitter, bilingual users often integrate elements from different languages within a single utterance. Among the various forms of code-switching, intra-sentential switching—where language alternation occurs within a single sentence—is considered especially complex, as it requires careful syntactic integration across languages (Poplack, 1980) (Poplack, 1980).

In multilingual societies such as Indonesia, the use of both Indonesian and English is highly prevalent, especially in informal online interactions. Previous studies have shown that English elements are frequently embedded within Indonesian sentences, often in the form of noun phrases, verb phrases, and other lexical insertions (Dovchin, 2020). These practices are commonly associated with communicative efficiency, stylistic expression, and identity construction in digital contexts. Recent research on digital multilingualism also suggests that social media platforms encourage fluid language use, allowing speakers to draw on multiple linguistic resources to achieve their communicative goals (Androutsopoulos, 2014) (Tagg et al., 2017).

From a more recent theoretical perspective, approaches such as translanguaging argue that bilingual language use should not be seen as the alternation between two separate systems, but rather as the flexible use of an integrated linguistic repertoire (Li et al., 2023), (García & Lin, 2016). Within this view, code-switching—particularly in digital contexts—is understood as a strategic and meaningful practice shaped by interactional, cognitive, and sociocultural factors. Empirical studies of online discourse further show that bilingual speakers tend to combine languages in ways that maintain grammatical coherence while also enhancing expressive potential (Soltani, 2014).

Despite these advances, several important gaps remain in the existing literature. First, much of the previous research on Indonesian–English code-switching has focused mainly on sociolinguistic motivations, identity construction, or lexical borrowing, with relatively little attention to how switching is structurally realized in naturally occurring discourse. Second, although intra-sentential code-switching is widely recognized as structurally complex, there is

still a lack of systematic analysis that brings together the types of switching structures, their positional distribution within sentences, and the syntactic categories involved. Without integrating these aspects, it remains difficult to fully understand how bilingual speakers organize and manage language alternation at the micro-syntactic level. As a result, existing explanations tend to focus more on why speakers switch languages, rather than how such switching is actually structured in real discourse, especially in fast-paced digital communication.

Third, studies that specifically examine Indonesian–English code-switching in Twitter discourse are still relatively limited. While digital multilingualism has been widely explored, platform-specific language practices—particularly within Twitter’s concise and dynamic interactional environment—have not been sufficiently analyzed from a structural linguistic perspective. Finally, although recent theories emphasize the idea of integrated bilingual repertoires, there is still limited empirical evidence showing how this integration is realized at the micro-syntactic level in authentic digital communication.

The purpose of this study is to examine how intra-sentential code-switching occurs in Indonesian–English Twitter discourse by focusing on its structural and syntactic patterns. Specifically, the study aims to identify the dominant types of switching structures, explore how code-switching is distributed across different positions within sentences, and analyze the syntactic categories involved. Through this approach, the study seeks to provide a clearer understanding of how bilingual speakers integrate linguistic resources in digital communication in a systematic and meaningful way.

The novelty of this study lies in its introduction of the concept of *Digital Bilingual Integration*, which views intra-sentential code-switching not as random language mixing, but as a structured and systematic linguistic practice. To address the gaps identified in previous studies, this research adopts a multi-dimensional approach by examining switching structure (e.g., insertion and phrase switching), positional distribution within sentences (beginning, middle, and end), and syntactic categories (such as noun phrases, verb phrases, adjective phrases, clauses, and adverbial phrases).

In addition, this study draws on authentic data from Twitter, allowing for the analysis of naturally occurring bilingual interaction in a digital context. The findings show that bilingual speakers tend to maintain Indonesian as the matrix language while embedding English elements in a patterned and controlled way. By bringing these aspects together, this study contributes to current discussions in digital multilingualism by providing empirical evidence that code-switching reflects systematic integration shaped by grammatical, cognitive, and communicative factors.

Building on this novelty, it becomes essential to further examine how such integration is structurally realized in actual discourse. Therefore, this study is designed to systematically investigate the patterns of intra-sentential code-switching in Indonesian–English Twitter communication by focusing on its structural forms, positional distribution, and syntactic realizations.

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understanding of how bilingual speakers integrate linguistic resources in digital communication in a systematic and meaningful way.

In order to achieve these objectives, the study is guided by the following research questions:

RQ1: What types of intra-sentential code-switching structures are dominant?

RQ2: How is code-switching distributed across sentence position?

RQ3: What syntactic categories are most frequently involved?

METHOD

2.1 Research Design

This study employed qualitative content analysis to systematically examine patterns of code-switching in digital discourse (Tashakkori & Teddlie, 2010); (Krippendorff, 2019), (Mayring, 2015) Recent methodological studies further emphasize that qualitative content analysis remains effective for identifying structural and interpretative patterns in textual data (Sale, 2022), (Mende, 2022).

2.2 Data Source and Sample Determination

The data of this study consist of Indonesian–English bilingual tweets containing instances of intra-sentential code-switching. Twitter was selected as the data source because it represents a dynamic digital communication platform where bilingual language use occurs naturally and spontaneously.

The sampling technique used in this study is purposive sampling, which involves selecting data based on specific criteria relevant to the research objectives (Ahmad & Wilkins, 2025) The criteria for data selection include:

1. Tweets must contain Indonesian–English code-switching
2. The switching must occur within a single sentence (intra-sentential)
3. The tweets must be authentic and publicly accessible
4. The data must represent informal digital discourse

Through this process, a total of 100 utterances were selected for analysis.

2.3 Data Collection

Data were collected using a non-participant observational method, as the researcher did not intervene in the communication process but only observed and recorded naturally occurring data (Singh et al., 2022)

The data collection procedures were as follows:

1. Identifying relevant tweets containing Indonesian–English code-switching
2. Capturing and documenting the tweets (screenshots or text transcription)
3. Filtering the data based on the established criteria
4. Organizing the data into a corpus for analysis

To ensure data credibility, only publicly available tweets were used, and personal identifiers were minimized to maintain ethical considerations in digital research.

2.4 Data Analysis

The data were analyzed using qualitative content analysis procedures, following systematic coding and categorization techniques (Krippendorff, 2019), (Sale, 2022), (Begum et al., 2016). This approach allows for the identification of patterns and meanings within textual data in a systematic and replicable manner.

To operationalize the analysis, a coding scheme was developed to classify each instance of intra-sentential code-switching based on three analytical dimensions: structural type, positional distribution within sentences, and syntactic category.

Table 1. Coding Scheme for Intra-Sentential Code-Switching Analysis

No	Data Code	Tweet Excerpt	Code-Switching Type	Structure Type	Position in Sentence	Syntactic Category	Description
1	T01	Aku lagi happy banget hari ini	Intra-sentential	Insertion	Middle	Adjective Phrase (AP)	“happy” inserted as adjective
2	T02	Dia lagi meeting sama client	Intra-sentential	Verb Phrase Switching	Middle	Verb Phrase (VP)	“meeting” used as VP
3	T03	This is so annoying banget	Intra-sentential	Clause Switching	Beginning	Clause	Full clause in English
4	T04	Aku beli skincare baru di store itu	Intra-sentential	Noun Insertion	Middle	Noun Phrase (NP)	“store” as noun
5	T05	Dia ngomongnya literally tiap hari	Intra-sentential	Adverb Insertion	Middle	Adverbial Phrase (AdvP)	“literally” as adverb

The coding categories were adapted from established theories of code-switching and syntax, allowing for a systematic classification of linguistic patterns observed in the data.

The analysis was conducted in several steps:

1. Data Familiarization

The researcher carefully read and reviewed all collected tweets to understand the overall patterns of code-switching.

2. Coding Process

Each instance of code-switching was coded based on three analytical dimensions:

- (1) **Structural type** (e.g., insertion, phrase-level switching)
- (2) **Positional distribution** (beginning, middle, end)
- (3) **Syntactic category** (NP, VP, AP, Clause, AdvP)

3. Categorization

The coded data were grouped into categories to identify dominant patterns in each dimension.

4. Quantification (Supportive)

Although qualitative in nature, frequency counts were used to support pattern identification and strengthen interpretation.

5. Interpretation

The findings were interpreted by relating them to existing theories of code-switching and digital multilingualism, particularly the concept of structural integration and bilingual language use.

FINDINGS AND DISCUSSION

RQ1: What types of intra-sentential code-switching structures are dominant?

The findings of this study reveal that insertion-based switching, particularly at the phrase level (adjective phrase, verb phrase, and noun phrase), is the most dominant pattern in the dataset. This indicates that bilingual speakers tend to embed English lexical and phrasal elements into Indonesian grammatical structures rather than switching between full clauses or sentences. This tendency is consistent with recent findings in bilingual discourse, where insertion is identified as a natural and efficient strategy for integrating linguistic resources in multilingual interaction (W. Wang, 2025), (Zhong & Fan, 2023), (Wyawhare, 2023), .

This pattern strongly supports the typology proposed by Pieter Muysken, who identifies *insertion* as one of the most common forms of intra-sentential code-switching, where elements from one language are integrated into the structure of another. In insertional switching, the grammatical frame remains stable while foreign elements are embedded within it, reflecting a controlled and systematic bilingual strategy. Empirical studies in contemporary media discourse have similarly shown that insertion emerges as the dominant type of code-mixing, particularly among bilingual speakers influenced by global culture (Cedden et al., 2025), (Gaskins et al., 2022), (Sulistyo et al., 2023), .

Recent research in educational and social contexts also confirms that insertion-based code-mixing is widely used due to its communicative efficiency and flexibility. For instance, studies on classroom interaction demonstrate that insertion is the most frequent type of code-mixing, as it allows speakers to convey meaning without disrupting sentence structure (Arumaisya, 2025), (Winata et al., 2022). Similarly, research in spoken discourse indicates that insertion dominates because it enables speakers to maintain fluency while integrating elements from another language.

Moreover, findings from digital media contexts reveal that bilingual speakers frequently employ insertional switching as part of everyday communication practices. Studies on social media discourse highlight that code-switching and code-mixing function as strategic tools for expression, identity construction, and audience engagement. This is particularly relevant in online environments, where exposure to global linguistic norms encourages the integration of English elements into local languages (Linguistik et al., 2024; Rabinovich et al., 2019), .

The dominance of phrase-level categories (AP, VP, NP) further aligns with findings in syntactic studies of code-switching, which suggest that switching is more likely to occur at structurally compatible units within a sentence. Research on Indonesian-English bilingual data also shows that intra-sentential switching is the most frequent form, indicating a high degree of integration between the two languages in informal communication.

RQ2: How is code-switching distributed across sentence positions?

The findings of this study indicate that the majority of code-switching occurs in the **middle of sentences (75%)**, followed by the beginning (18%) and end positions (7%). This distribution suggests that bilingual speakers tend to integrate English elements directly into the internal structure of Indonesian sentences rather than placing them at syntactic boundaries. Such a pattern reflects a high degree of grammatical integration and indicates that code-switching is not random but structurally constrained (Blackburn & Wicha, 2022), (Rugaiyah & Ariyanto, 2025).

Recent studies in digital communication contexts confirm that **intra-sentential switching particularly in medial positions is the most dominant pattern in bilingual discourse**, as it allows speakers to embed foreign elements while maintaining syntactic coherence (Moradi & Chen, 2022). This aligns with findings that bilingual users frequently switch languages within ongoing utterances to enhance communicative effectiveness and adapt to dynamic online interactions.

The dominance of middle-position switching also supports recent sociolinguistic research showing that code-switching functions as a **strategic communicative resource**, especially in social media environments. In such contexts, speakers insert elements from another language to express identity, emphasize meaning, or align with global linguistic norms. This suggests that medial switching is preferred because it allows seamless integration without interrupting the flow of discourse.

Furthermore, studies on Indonesian-English bilingual discourse indicate that code-switching in digital platforms such as TikTok and Instagram frequently occurs within sentence structures, reflecting the flexible and hybrid nature of online communication. This reinforces the idea that middle-position switching is closely associated with informal, spontaneous language use in digital environments.

From a structural perspective, the preference for medial switching can also be explained by its **lower syntactic cost**. Research in bilingual education and discourse analysis highlights that intra-sentential switching enables speakers to maintain grammatical consistency while incorporating elements from another language. This makes it a more efficient strategy compared to switching at clause boundaries, which requires greater syntactic reorganization (Heredia et al., 2022), (L. Wang, 2024).

In addition, recent studies emphasize that code-switching is influenced by **social and identity-related factors**, where speakers strategically choose switching points based on audience, context, and communicative goals. Middle-position switching, therefore, allows speakers to balance linguistic structure with social meaning, making it a preferred choice in bilingual interaction.

Moreover, contemporary research highlights that code-switching in digital discourse has become a **normalized linguistic practice**, particularly among younger generations who regularly engage with multilingual environments. This normalization further explains why switching occurs fluidly within sentence structures rather than at rigid boundaries.

Additional findings also suggest that code-switching operates as a **stylistic and identity-building device**, where the insertion of English elements within Indonesian sentences enhances expressiveness and aligns speakers with modern, globalized identities. This reinforces the functional role of medial switching in conveying nuanced social meanings

RQ3: What syntactic categories are most frequently involved?

The findings of this study reveal that **adjective phrases (28%)**, followed by **verb phrases (22%)** and **noun phrases (20%)**, are the most dominant syntactic categories in intra-sentential code-switching. This pattern indicates that bilingual speakers predominantly integrate English elements at the phrase level rather than at more complex syntactic units such as clauses.

Recent research in bilingual syntax confirms that **phrase-level categories are the most frequent sites of code-switching**, as they provide structurally flexible units that can be easily inserted into the base language without disrupting grammatical coherence. For instance,

a study published in *Bilingualism: Language and Cognition* demonstrates that code-switching is strongly influenced by structural compatibility, where speakers tend to switch at points that align with the grammatical constraints of both languages.

The prominence of adjective phrases in this study suggests that English adjectives function as key resources for expressing evaluation and stance. Recent research on bilingual discourse shows that adjectives are frequently used in code-switching because they carry strong affective and descriptive meanings, allowing speakers to convey nuanced evaluations more effectively. This supports the idea that adjective-based switching is not only structurally convenient but also pragmatically motivated.

Furthermore, the high frequency of verb phrase switching indicates that English plays a significant role in encoding actions and processes. Contemporary studies in second language interaction highlight that bilingual speakers often align their language use with their interlocutors and communicative context, leading to the integration of verb phrases that are perceived as more efficient or contextually appropriate. This suggests that verb phrase switching reflects both linguistic adaptability and interactional alignment.

The distribution of noun phrases also reinforces the role of English as a lexical resource in bilingual communication. Recent studies in multilingual contexts emphasize that noun insertion is commonly used to introduce globally recognized concepts, technical terminology, or culturally salient expressions, particularly in digital discourse environments. This indicates that noun phrase switching is closely tied to the globalization of language and the diffusion of English vocabulary across online platforms.

In contrast, clause-level switching (15%) appears less frequent, suggesting that bilingual speakers tend to avoid switching at higher syntactic levels due to increased structural complexity. Psycholinguistic research has shown that switching at clause boundaries requires greater cognitive effort, as it involves reorganizing syntactic structures across languages. As a result, speakers prefer phrase-level insertion, which allows smoother processing and maintains fluency.

Similarly, adverbial phrase switching (15%) highlights the role of English in modifying discourse-level meaning. Recent studies on code-switching strategies indicate that adverbial elements are often used to adjust tone, stance, or emphasis within communication, reflecting the functional versatility of code-switching in bilingual discourse.

Overall, the distribution of syntactic categories demonstrates that intra-sentential code-switching is a **systematic and constrained linguistic phenomenon**. The preference for phrase-level switching reflects the interaction between grammatical structure, cognitive processing, and communicative function. These findings confirm that bilingual speakers utilize code-switching as a sophisticated strategy to balance linguistic efficiency and expressive richness in digital discourse.

Comprehensive Analysis of Intra-Sentential Code-Switching Patterns

The findings presented in sections A (structural distribution), B (positional distribution), and C (syntactic category distribution) reveal a consistent and interconnected pattern of intra-sentential code-switching. Rather than functioning as isolated phenomena, these three dimensions collectively demonstrate how bilingual speakers systematically integrate English elements into Indonesian sentence structures.

From the structural perspective (A), the dominance of insertion-based switching indicates that English elements are primarily embedded within an Indonesian grammatical

framework. This is evident in the high frequency of adjective insertion, noun insertion, and verb phrase switching, which show that speakers tend to incorporate English at the lexical and phrasal level rather than switching across larger syntactic units.

This pattern is further reinforced by the syntactic category distribution (C), where phrase-level categories—particularly adjective phrases (28%), verb phrases (22%), and noun phrases (20%)—are the most frequently occurring forms. The alignment between structural types and syntactic categories suggests that code-switching predominantly operates at the level of phrases, which provide structurally flexible units for integration.

The positional distribution (B) offers additional support for this interpretation. The overwhelming dominance of switching in the middle of sentences (75%) indicates that English elements are inserted directly into the internal structure of Indonesian utterances rather than placed at sentence boundaries. This medial positioning reflects a high level of syntactic integration, as speakers maintain grammatical coherence while embedding elements from another language.

Taken together, these three findings point to a single underlying pattern: code-switching in this dataset is predominantly insertional, occurs primarily at the phrase level, and is realized within the medial position of sentences. This convergence demonstrates that bilingual speakers are not randomly alternating between languages, but are instead following systematic structural and functional principles.

This integrated pattern suggests that Indonesian functions as the primary grammatical framework, while English serves as an embedded linguistic resource. Speakers selectively incorporate English elements to enhance meaning, expressiveness, and communicative efficiency without disrupting syntactic structure.

Furthermore, the preference for phrase-level insertion in medial positions indicates an optimization strategy in bilingual language use. By inserting English elements within ongoing sentence structures, speakers minimize cognitive load, maintain fluency, and achieve more nuanced expression.

CONCLUSION

The overall findings of this study demonstrate that intra-sentential code-switching in Indonesian–English bilingual discourse is a systematic, structured, and functionally motivated phenomenon, rather than a random mixture of languages. The integration of results from structural distribution, positional distribution, and syntactic category analysis reveals a consistent pattern of language use among bilingual speakers.

First, from the structural perspective, the dominance of insertion-based switching indicates that English elements are primarily embedded within Indonesian sentence structures. This suggests that speakers maintain Indonesian as the grammatical foundation while selectively incorporating English lexical and phrasal units to enhance expression and communicative efficiency.

Second, the positional analysis shows that code-switching overwhelmingly occurs in the middle of sentences. This finding reinforces the structural pattern observed earlier, as medial positioning allows speakers to insert English elements directly into ongoing syntactic constructions without disrupting sentence coherence. It also reflects a high level of bilingual competence, where speakers can manage two linguistic systems simultaneously within a single utterance.

Third, the distribution of syntactic categories further strengthens this pattern, with phrase-level elements particularly adjective phrases, verb phrases, and noun phrases being the most frequently used forms. This indicates that code-switching tends to occur at structurally flexible units that enable smooth integration between languages while minimizing grammatical conflict.

Taken together, these findings reveal a unified pattern: bilingual speakers consistently employ phrase-level insertion in medial positions within an Indonesian matrix structure. This pattern reflects an optimal balance between grammatical control, cognitive efficiency, and communicative effectiveness.

From a broader perspective within Sociolinguistics, the results highlight that code-switching functions not only as a linguistic strategy but also as a social and pragmatic resource. The use of English elements contributes to expressive richness, identity construction, and alignment with globalized communication practices, particularly in digital discourse contexts.

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