Willingness to Communicate in EFL and ESL Research (2016-2025): A Bibliometric Mapping of the Field

Siti Khadijah Mohd Yusof[1], Fatin Syamilah Che Yob[1], Lim Seong Pek[1], Dianna Suzieanna Mohamad Shah[2], M. Zaini Miftah[3], & Elfi Elfi[4]

[1] INTI International University, Malaysia

[2] Universiti Teknologi MARA, Malaysia

[3] Universitas Islam Negeri Palangka Raya, Indonesia

[4] Universitas Islam Negeri Mahmud Yunus, Indonesia

Correspondence: Siti Khadijah Mohd Yusof, INTI International University, Malaysia.

Received: February 23, 2026 Accepted: May 19, 2026 Online Published: November 5, 2026

doi:10.5430/wjel.v17n1p522 URL: https://doi.org/10.5430/wjel.v17n1p522

Abstract

This bibliometric study maps the intellectual structure and research evolution of Willingness to Communicate (WTC) in EFL and ESL contexts from 2016 to 2025. By examining 391 Scopus-indexed journal articles, the study applies performance analysis, co-citation analysis and co-occurrence analysis to identify publication trends, influential authors, key institutions and dominant thematic clusters. Findings reveal exponential growth in WTC research with strong foundations in ecological, sociocognitive and affective frameworks. Psychological constructs such as motivation, foreign language enjoyment and anxiety emerge as central drivers of communicative behavior while demographic and contextual variables remain comparatively under-integrated. The analysis also highlights increasing engagement with digital learning and artificial intelligence, though theoretical integration across clusters remains limited. Geographical concentration in Asian and Middle Eastern EFL contexts suggests the need for broader cross-contextual validation. By systematically synthesizing the field, this study contributes to evidence-based language pedagogy and supports inclusive, equitable and quality education aligned with SDG 4 (Quality Education). The findings inform sustainable language education practices that promote learner agency, communicative competence and lifelong learning in globalized educational environments.

Keywords: Willingness to Communicate, EFL, ESL, bibliometric analysis, positive psychology, SDG 4, quality education, sustainable education

1. Introduction

1.1 Background and Problem Statement

Although Grammar Translation Method (GTM) and Audio Lingual Method (ALM) remain useful in certain instructional contexts, particularly for grammar mastery and structured language practice, these approaches are often considered less effective in promoting authentic communication and interaction in 21st-century ESL and EFL classrooms (Richards & Rodgers, 2014). Modern classrooms prioritize communicative competence, fluency, interaction and authentic conversational skills (Chen & Shuib, 2026). Therefore, many educators have enhanced their teaching pedagogy by incorporating Communicative Language Teaching (CLT) or Task-Based Language Teaching (TBLT) into lesson design to ensure that students are actively engaged in meaningful communication, develop practical language skills and use English effectively in real-life contexts (Chunliu & Guangsheng, 2025; Ellis, 2003).

However, implementing CLT fully in the classroom remains challenging because it heavily relies on students' Willingness to Communicate (WTC). Students often hesitate to speak due to anxiety, shyness and low motivation particularly in Asian contexts where face-saving is highly valued. Recognizing the effectiveness of CLT in fostering 21st-century learning in EFL and ESL contexts, researchers have increasingly examined WTC as a crucial factor influencing foreign and second language acquisition. The heuristic model proposed by MacIntyre et al. (1998) conceptualizes WTC as a dynamic construct shaped by affective, cognitive and situational variables that influence learners' decisions to speak. Research further indicates that learners with higher WTC seek more communication opportunities, experience reduced anxiety and achieve long-term language proficiency (Xiao & Jia, 2025; Dewaele, 2019).

Despite the growing number of empirical research, the intellectual structure and developmental trajectory of WTC research remain insufficiently synthesized. While individual studies have explored specific antecedents and outcomes of WTC, the field lacks a systematic mapping of its publication trends, influential contributors and thematic evolution.

1.2 Significance of Mapping WTC Research

The increasing volume of WTC research across diverse educational contexts demonstrates its centrality in contemporary applied

linguistics. As the field expands, studies have drawn upon multiple theoretical frameworks and methodological designs that result in a fragmented yet rich body of knowledge. It becomes difficult to identify dominant research themes, collaboration networks and emerging directions that shape the cumulative development of the field without a comprehensive synthesis

Therefore, a systematic bibliometric analysis is essential to reduce or resolve this fragmentation. By mapping the intellectual landscape of WTC research, it is possible to identify which theoretical perspectives are prominent and where conceptual or methodological gaps remain. This is crucial for guiding future empirical research and informing evidence-based pedagogical practices in ESL and EFL contexts.

1.3 Theoretical Foundations and Research Development

WTC research has evolved significantly since the foundational work of MacIntyre et al. (1998) in which WTC as a situational and dynamic construct influenced by psychological and contextual variables. Additionally, Dörnyei & Ryan (2015) integrated perspectives from motivation theory, positive psychology and learner identity which further expanded the theoretical scope of the construct. Following empirical studies have examined variables such as teacher support, classroom climate, anxiety, motivation and technology integration (Lee, 2022; Cui & Xu, 2025). This highlights the multifaceted nature of WTC.

Although prior research has provided valuable theoretical and empirical insights, most studies have focused on testing relationships among specific variables within localized contexts. To date, limited attention has been given to systematically analysing the overall intellectual structure, citation patterns, collaboration networks and thematic clusters that define WTC scholarship as a whole. Therefore, a bibliometric perspective is necessary to complement existing empirical findings and provide a macro-level understanding of the field's development.

1.4 Research Objectives and Analytical Approach

This study employs bibliometric analysis to systematically map the intellectual structure, research evolution and thematic dynamics of WTC scholarship in ESL and EFL contexts. Bibliometric techniques enable the quantitative examination of large volumes of scholarly publications through performance analysis and science mapping methods. This study aims to:

- examine publication trends and growth patterns in WTC research.
- identify the most influential authors, institutions and countries contributing to the field.
- analyse citation networks and collaboration patterns.
- explore co-occurring keywords and thematic clusters to determine dominant and emerging research themes.

By aligning these objectives with bibliometric research design, the study provides a structured and data-driven overview of the cumulative development of WTC research. This macro-level synthesis contributes to theoretical consolidation, identifies critical research gaps and offers informed directions for future scholarship in applied linguistics.

2. Method

This study employs bibliometric analysis, a quantitative research method used to systematically evaluate and map the intellectual structure, development and trends within a specific research field. Bibliometric analysis enables researchers to examine large volumes of published literature using statistical and visualization techniques, thereby identifying influential publications, authors, institutions, collaboration networks and thematic patterns (Zupic & Čater, 2015; Donthu et al., 2021; Wider et al., 2023). In this study, three primary techniques were applied which are performance analysis, co-citation analysis and co-occurrence analysis. Performance analysis measures the productivity and scholarly impact of the field by examining publication output, citation counts, leading authors, institutions, countries and journals. Co-citation analysis identifies the intellectual foundations of the domain by analysing how frequently two documents, authors or sources are cited together, thereby revealing influential works and theoretical clusters. Meanwhile, co-occurrence analysis (keyword analysis) explores the conceptual structure of the field by examining the frequency and relationships among keywords, allowing the identification of dominant themes, emerging topics and research trends. These techniques provide a comprehensive overview of the evolution, knowledge structure and research dynamics of Willingness to Communicate (WTC) studies in ESL and EFL contexts.

2.1 Data Source and Retrieval Strategy

Scopus was selected as the sole database for this study because it provides extensive coverage of peer-reviewed journals in applied linguistics, education and social sciences, while also offering standardized bibliographic information compatible with bibliometric software (Donthu et al., 2021). Compared with other databases, Scopus ensures broader international journal coverage and reliable citation indexing, making it appropriate for large-scale science mapping studies.

The data retrieval process was conducted in January 2026 using the search field TITLE-ABS-KEY. The Boolean search string combined the core construct ("willingness to communicate" OR "WTC" OR "L2 WTC") with contextual descriptors related to English language learning ("EFL", "ESL", "English as a foreign language", and "English as a second language"). Only journal articles published in English between 2016 and 2025 were included to ensure analytical consistency and relevance to recent developments in the field.

2.2 Data Cleaning and Screening Procedures

To ensure data accuracy and reliability, several preprocessing procedures were conducted before analysis. Duplicate records were manually checked and removed. Inconsistent author names, abbreviations and keyword variations were standardized to improve network

accuracy. For example, terms such as “WTC”, “L2 WTC” and “willingness to communicate” were merged under a unified keyword category. Similarly, variations in institutional names and author initials were harmonized to avoid fragmented mapping outputs.

The screening and refinement process followed the PRISMA 2020 framework (Page et al., 2021), which enhanced methodological transparency and reproducibility.

2.3 Bibliometric Analysis Tools and Procedures

The bibliometric analysis was conducted using VOSviewer version 1.6.20, which is widely used for visualizing bibliometric networks and thematic relationships in social science research. Three analytical approaches were employed: performance analysis, co-citation analysis and keyword co-occurrence analysis.

Performance analysis examined publication trends, influential journals, authors, institutions and countries. Co-citation analysis was used to identify the intellectual structure and foundational literature of the field by analysing relationships among highly cited studies. Meanwhile, co-occurrence analysis explored conceptual structures and thematic developments through keyword relationships.

Thresholds were set in VOSviewer to determine which items were included in each network. For the co-citation analysis, the minimum number of citations for a cited reference was 7; 55 of the 2,215 cited references met this criterion. For the keyword co-occurrence analysis, the minimum number of occurrences was 7; 49 of the 1,191 keywords met this criterion. The units of analysis consisted of documents, authors, institutions, countries and author keywords, depending on the analytical objective.

2.4 Analysis of Inclusion Table

Table 1 shows a specific set of inclusion criteria to identify relevant studies for bibliometric analysis that was employed by this study. Scopus database was selected due to its extensive coverage of peer-reviewed journals in the social sciences and applied linguistics to ensure the credibility of the source material (Donthu et al., 2021). Studies that relate to contemporary theoretical and pedagogical developments in the field of Willingness to Communicate (WTC) were filtered from 2016 to 2025 to ensure the analysis is relevance. In addition, studies selected were based on title, abstract and keywords (TITLE-ABS-KEY) using a Boolean string. It combined the core construct ("willingness to communicate" OR "wtc" OR "L2 WTC") with the population context ("efl" OR "esl") to ensure all related and relevant were included in the analysis (Bramer, 2018). Further refinement was achieved by restricting the document type to "Article" and source type to "Journal” to focus the analysis on primary research within established studies. Finally, a language filter (English) was applied to ensure the accurate processing of keywords and abstracts by the analytical software. These criteria aimed to generate a dataset that is both comprehensive within its defined boundaries and analytically homogeneous (Zupic & Čater, 2015).

Table 1. Inclusion Criteria for Bibliometric Analysis

Scopus Database	ALL
Time period	2016 to 2025
Search field	TITLE-ABS-KEY
Search keywords	"willingness to communicate" OR wtc OR "L2 WTC"
	efl OR "english as a foreign language" OR "english language teaching" OR "esl" OR "English as a second language"
Document Types	Article
Source Types	Journal
Language	English

2.5 Analysis of PRISMA Flowchart

This bibliometric analysis used systematic protocol outlined in the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart that provides a transparent identification, screening, eligibility and inclusion (Page et al., 2021). This is to mitigate selection bias and enhance methodological accuracy. The initial search in the Scopus database yielded 511 records and 57 studies that were not in the year 2016-2025 were removed. The remaining 454 records were then screened by document and source type. 61 records that were not journal articles were excluded and resulted in 393 records for full-text eligibility assessment. At this stage, two articles were excluded for not being in the English language and for being unrelated to the core topic. A final corpus of 391 studies was then extracted and analysed. The PRISMA flowchart ensures the validity and reproducibility of the subsequent bibliometric analysis.

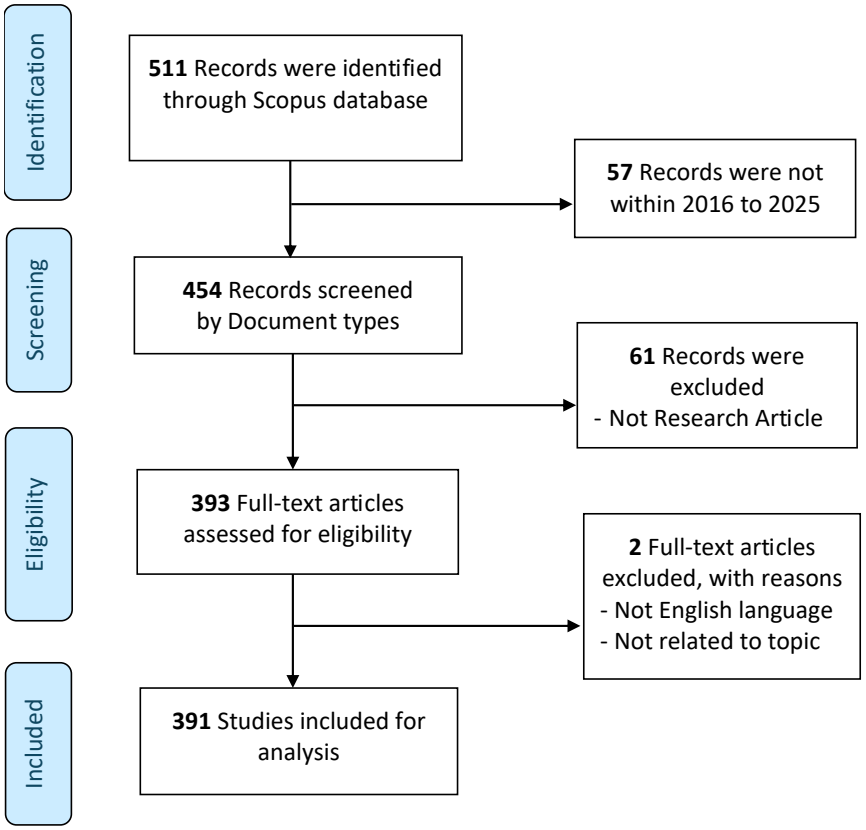


Figure 1. PRISMA Flowchart

3. Results

3.1 Performance Analysis

3.1.1 By Years

The analysis of publication years reveals an upward trajectory in research relating to Willingness to Communicate (WTC) among EFL and ESL learners from 2016 to 2025. It began with only six publications in 2016. It then maintained about 30 publications annually in 2019 and 2020. Then it reached about 100 publications in 2025. This growth pattern indicates that WTC has evolved from a niche interest into a major and rapidly expanding domain within applied linguistics and language education research. This trend illustrates a growing recognition of WTC's role in successful language acquisition apart from affective and psychological factors in learning. The field is currently highly active with new findings and theoretical perspectives which indicates the relevance of this bibliometric study.

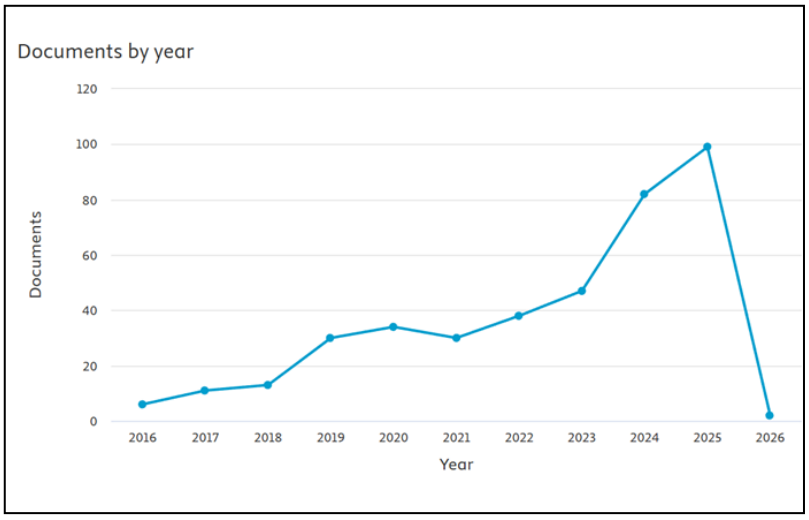


Figure 2. Number of Documents by Year

3.1.2 By Sources

There are several prolific sources that produce research relating to WTC which are Language Teaching Research (23 documents), System (19) and the Journal of Multilingual and Multicultural Development (18) based on Scopus analysis. Computer Assisted Language Learning acquires a high citation count (439) despite its rank in the second. It indicates the significant influence of its published WTC research in technological contexts. On the other hand, Innovation in Language Learning and Teaching, that has more publications, has lower citations (343). This reveals a distinction between productivity and impact. This distinction suggests that publication frequency alone does not necessarily indicate scholarly influence. Journals with fewer publications may achieve stronger citation impact when their studies introduce influential theoretical or methodological contributions. This reflects the importance of evaluating both productivity and citation influence when interpreting the development of WTC scholarship. In addition, Frontiers in Psychology journal, that has ten publications with 172 citations, highlights crucial research of psychological dimensions. This pattern shows that WTC studies are distributed through established language teaching and interdisciplinary journals. This reflects its integration into both language pedagogy and psychology discourses.

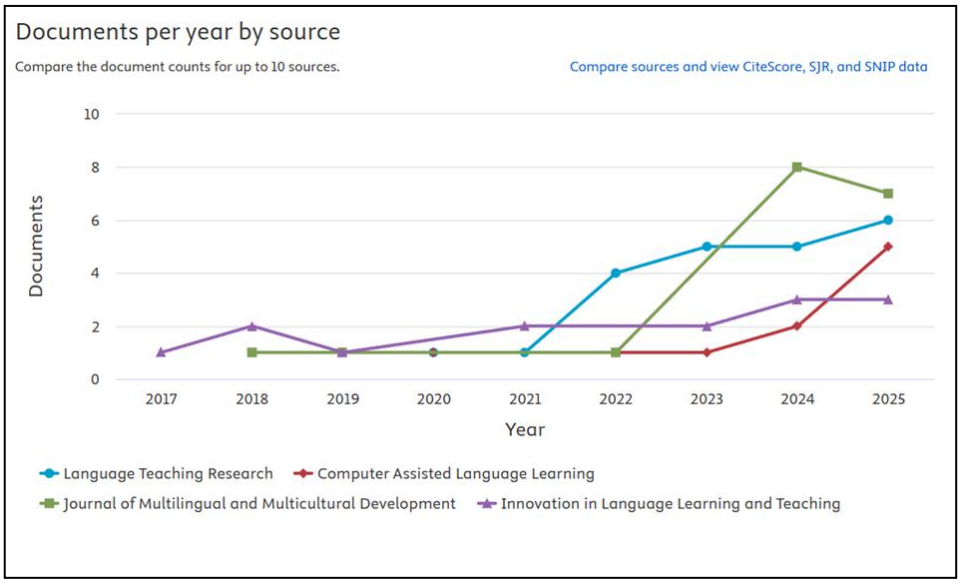


Figure 3. Number of Documents by Source

3.1.3 By Authors

The top ten prolific authors have at least 4 publications. Lee, J.S stands as the most influential author that contributes 18 documents with an exceptionally high citation count (1377), conceptualizing willingness to communicate through affective, motivational and dynamic systems perspectives across digital and non-digital learning environments. Other key authors include Dewaele, J.M, Fathi, J., MacIntyre, P.D., and Khajavy, G.H. acquire substantial citation numbers despite a slightly lower document count. Their research examines affective–motivational factors and contextual dynamics underlying willingness to communicate. These authors have achieved higher citation numbers than Zarrinabadi, N. (8 publications, 247 citations) and Azari Noughabi, M. (7 publications, 55 citations). Overall, this pattern highlights a research field shaped by both highly productive specialists and influential theorists who integrate willingness to communicate into broader SLA, psychological and contextual frameworks.

3.1.4 By Affiliations

The Education University of Hong Kong recorded as the highest publication (26) with highest citation (1413). In addition, several Iranian institutions had dominated the publications in WTC research including University of Kurdistan with five publications and with significant citations (465). There are also other institutions that indicate a globally research effort such as Malaysia, Saudi Arabia, Canada and the UK. Likewise, institutions in Saudi Arabia and mainland China show increasing publication output, signaling a geographically concentrated yet expanding research network within EFL-dominant regions. Overall, the data shows that the empirical and theoretical work on language learners' willingness to communicate points to East Asia and the Middle East. While this concentration reflects contextual relevance in foreign language settings, it also suggests the need for broader institutional representation from ESL contexts to enhance cross-cultural generalizability.

Table 2. Number of Documents by Affiliation

Rank	Organisation	Documents	Citations
1	Department of English Language Education, The Education University of Hong Kong, Hong Kong	15	812
2	The Education University of Hong Kong, Hong Kong	10	601
3	Department of English Language and Literature, Hakim Sabzevari University, Sabzevar, Razavi Khorasan, Iran	6	52
4	Cape Breton University, Sydney, NS, Canada	5	452
5	Department of Applied Linguistics, Xi'an Jiaotong-Liverpool University, Suzhou, Jiangsu, China	5	143
6	Department Of English and Linguistics, University of Kurdistan, Sanandaj, Kurdistan, Iran	5	465
7	Department of English Language and Literature, Golestan University, Gorgan, Golestan, Iran	5	278
8	Nanjing Normal University, Nanjing, Jiangsu, China	5	327
9	University of Isfahan, Isfahan, Isfahan, Iran	5	130
10	Department of English Language and Literature, Shahid Beheshti University, Tehran, Tehran, Iran	4	122

3.1.5 By Countries

WTC has become a global research priority as evident in the geographical distribution of publications. Iran and China are the two most productive nations, accounting for over half of the publication output with 101 and 96 documents respectively. Other countries such as Hong Kong (33), Malaysia (30), Japan (23), Saudi Arabia (22) and Thailand (20) further highlight that research in EFL contexts is concentrated in Asian and Middle Eastern regions. This pattern further suggests that WTC research in EFL contexts is heavily concentrated within Asian and Middle Eastern regions. This pattern further suggests that WTC research in EFL contexts is heavily concentrated within Asian and Middle Eastern regions. The significant output from these regions likely correlates with the challenges and dynamics of learning English in foreign language environments where communication opportunities may be scarce. This illustrates that WTC is predominantly studied in contexts where English is a foreign language and overcoming barriers to authentic language use is crucial. The geographical concentration of publications also implies that current WTC models may be strongly shaped by EFL-oriented educational realities, including examination-driven systems, limited exposure to authentic communication and sociocultural concerns related to language anxiety and face-saving. Consequently, findings derived predominantly from Asian and Middle Eastern contexts may not fully represent communication dynamics in multilingual or ESL environments.

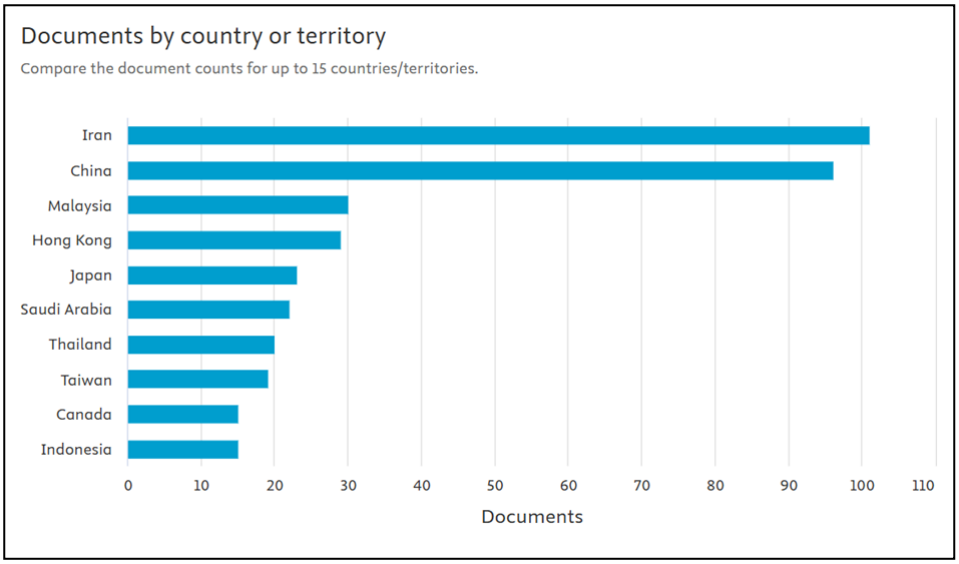


Figure 4. Number of Documents by Country

3.2 Co-citation Analysis

The co-citation analysis used a minimum threshold of 7 citations per cited reference. Of the 2,215 cited references, 55 met this threshold

and were included in the network. The analysis identifies works that are frequently cited together, revealing shared theoretical foundations and influential knowledge structures in Willingness to Communicate (WTC) research in EFL and ESL contexts. Table 3 presents ten selected co-cited references, with their citation counts and total link strength.

Table 3. Co-citation Articles (Top 10 Most Cited)

Rank	Authors	Title	Citations	Total Link Strength
1	Cao, Yiqian (2006)	Interactional context and willingness to communicate: A comparison of behavior in whole class, group and dyadic interaction	85	281
2	Cao, Yiqian (2011)	Investigating situational willingness to communicate within second language classrooms from an ecological perspective	83	300
3	Baker, Susan C. (2000)	The role of gender and immersion in communication and second language orientations	57	179
4	Cao, Yiqian Katherine (2014)	A Sociocognitive Perspective on Second Language Classroom Willingness to Communicate	56	185
5	Al-Murtadha, Mutahar A. (2019)	Enhancing EFL learners' willingness to communicate with visualization and goal-setting activities	28	53
6	Baker, Susan C. (2003)	The role of gender and immersion in communication and second language orientations (2003)	21	79
7	Dewaele, Jean Marc (2019)	The effect of classroom emotions, attitudes toward English, and teacher behavior on willingness to communicate among EFL learners	21	70
8	(Unknown) (2012)	Turkish college students willingness to communicate in English as a foreign language	21	63
9	Alrabai, Fakieh (2024)	Modeling the relationship between classroom emotions, motivation, and learner WTC in EFL: A positive psychology approach	24	64
10	Burgoon, Judee K. (1976)	The Unwillingness-To-Communicate Scale: Development and Validation	24	68

As shown in Table 3, the three studies by Cao, Yiqian being the top ranks with substantial citations and total link strengths. Her studies collectively emphasize contemporary research on willingness to communicate (WTC) in second language acquisition. Her study on ecological investigation emerging as the most strongly connected work (83 citations, link strength 300) in which it closely interlinked references constitute the core of the WTC domain. The network further reveals important theories and methodologies to explore WTC. Baker's (2000) study on gender and immersion (link strength 179) provides a demographic and contextual contraints while Dewaele (2019) and Alrabai (2024) integrate affective dimensions such as classroom emotions and motivation into the WTC framework. This reflects that the field shifts toward psychology approaches. In addition, Burgoon's (1976) study on Unwillingness-to-Communicate Scale (link strength 68) serves as a pioneer study that links WTC research to broader communication apprehension theories. This co-citation map highlights co-cited works form a cohesive knowledge structure that bridges early scale development, sociocognitive and ecological theories and contemporary interventions aimed at enhancing communicative willingness in EFL learners.

3.2.1 Co-citation Analysis by Clusters

Cluster 1 (red): Foundational and Contextual WTC Studies

Cluster 1 represents the theoretical core of willingness to communicate (WTC) research with an emphasis on how interactional settings shape communicative behavior. There are sixteen publications united by three interconnected theories which are interactional or ecological perspective on WTC (Cao, 2006, 2011, 2014), contextual and individual difference variables (Baker, 2000, 2003; Clément, 2003) and foundational communicative competence models (Canale & Swain, 1980). These interconnected theories are supported by empirical studies demonstrating the dynamic and context-sensitive nature of WTC (Bernales, 2016; Cameron, 2015). These studies demonstrate that WTC is not fixed but changes according to classroom context, making the learning environment central to understanding students' willingness to communicate.

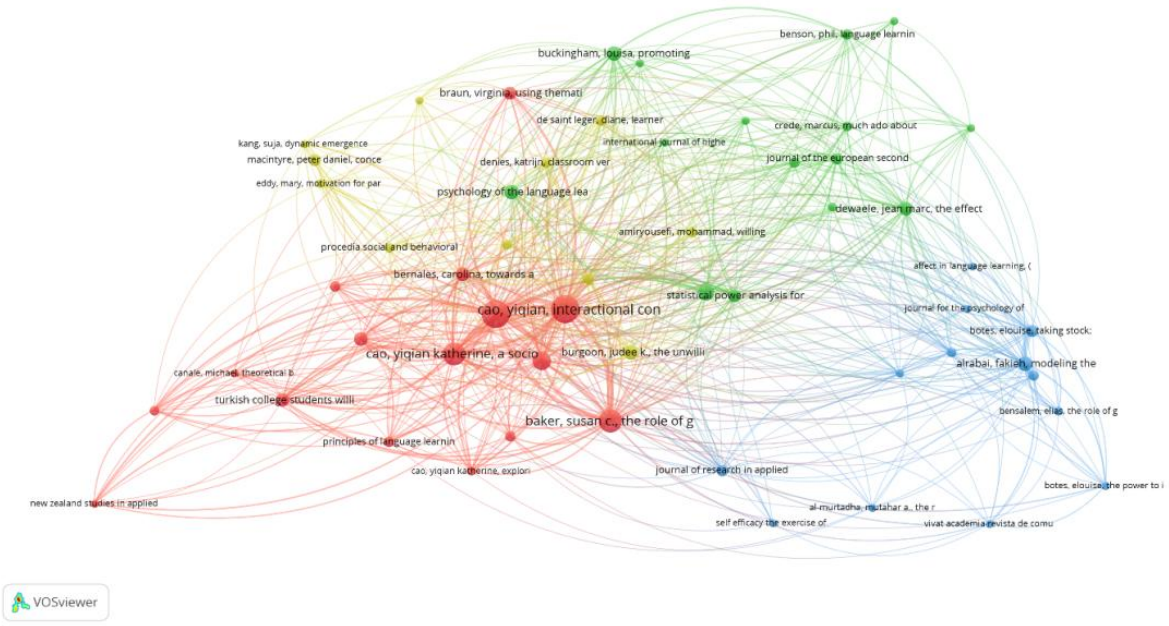


Figure 5. Co-Citation Analysis (VOSviewer Visualization)

Cluster 2 (green): Motivation and Digital Learning

Cluster 2 explores the psychological and environmental factors of WTC that focus on the student's intrinsic motivation. The publications are about two main themes which are motivation and self-regulation. This can be evidenced in Al-Hoorie's (2018) meta-analysis of the L2 Motivational Self System, Clément et al. (1994) on self-confidence and group cohesion and Crede et al. (2017) on the role of grit. Furthermore, this cluster expands WTC into digital setting as seen in Benson's (2011) work on learning beyond the classroom and Buckingham's (2017) study on asynchronous computer-mediated practice. These strands are connected by intervention-based research by Al-Murtadha (2019) on visualization and goal-setting and Dewaele (2019) on integration of classroom emotions. This cluster emphasizes how current research has broadened its scope to include psychological traits and the possibility of informal and digital learning spaces.

Cluster 3 (Blue): Emotions and Affective States

Cluster 3 highlights the integration of positive psychology in language learning into WTC research. There are two main focuses which are development and validation of instruments to measure affective states and application of emotion-integrating models. This can be seen in the work of Botes et al. (2020, 2021, 2022a, 2022b) on foreign language enjoyment and anxiety scales, Alrabai's (2024) on positive psychology framework and Boudreau et al. (2018) on idiodynamic examination of enjoyment and anxiety in real-time communication. In addition, studies by Al-Murtadha (2021) links WTC to academic achievement and Bensalem (2025) explores grit and enjoyment cross-culturally. This cluster emphasizes student well-being and emotional experiences are crucial in fostering communicative willingness.

Cluster 4 (Yellow): Psychological Antecedents & Situational Models

Cluster 4 highlights the immediate antecedents of WTC that connect classic psychological constructs with situational analysis. There are two main areas of research. First, the early research that defines WTC as can be seen in Burgoon's (1976) Unwillingness-to-Communicate Scale and MacIntyre's (1998) situational model of L2 confidence. Second, the contemporary empirical and methodological extensions as can be seen in Kang's (2005) dynamic model, Fallah's (2014) structural equation modeling of self-confidence and motivation and Baran-Łucarz's (2014) investigation of pronunciation anxiety. These research themes are unified by studies that examine the interaction between perception and context which are Léger (2009) on learner attitudes and Denies & Janssen (2015) comparing classroom versus societal WTC. This cluster maps the micro-processes of communication that shows stable traits and situational cues.

Table 4. Co-Citation Analysis by Clusters

Cluster No and Colour	Cluster Labels	No. of Articles	Representative Publications
Cluster 1 (Red)	Foundational & Contextual WTC Studies	16	MacIntyre (1998); Canale (1980); Clément (2003); Cao (2006, 2011, 2013, 2014); Bernales (2016); Cameron (2015)
Cluster 2 (Green)	Motivation and Digital Learning	15	Clément (1994); Al-Hoorie (2018); Al-Murtadha (2019); Benson (2011); Buckingham (2017); Dewaele (2019); Credé (2017)
Cluster 3 (Blue)	Emotions and Affective States	13	Boudreau (2018); Botes (2020, 2021, 2022a, 2022b); Alrabai (2024); Bensalem (2025); Al-Murtadha (2021)
Cluster 4 (Yellow)	Psychological Antecedents & Situational Models	11	MacIntyre (1998); Kang (2005); Eddy (2015); Fallah (2014); Denies (2015); Baran-Łucarz (2014); Burgoon (1976)

3.3 Co-occurrence Analysis

The co-occurrence analysis included 49 keywords that met the minimum occurrence threshold of 7. These keywords were selected from a total of 1,191 keywords. Table 5 presents ten of the most frequent and central keywords. Willingness to Communicate (WTC) was the most prominent keyword, with 249 occurrences and a total link strength of 347. Other frequently occurring keywords included motivation (33 occurrences), EFL learners and gender (31 occurrences each), and communication, foreign language enjoyment and EFL (21 occurrences each). These keywords show connections between WTC and affective, contextual and demographic factors. Two interrelated thematic strands emerge from the co-occurrence patterns.

The first strand consists of affective and motivational factors that influence communication behaviour. 'Motivation' appears to be a significant factor that relates to WTC with 33 occurrences and 156 link strength. In addition, 'foreign language enjoyment' also appears to be a crucial factor or a role that correlates to WTC with 21 occurrences and 52 link strength. Although 'communication' does not appear as much as 'motivation' but it exhibits a high link strength (21 occurrences, 186 link strength). This suggests that 'communication' is studied not in isolation but is interrelated with psychological factors such as 'motivation' and 'foreign language enjoyment'.

The second strand is about the contextual and demographic information of this research. 'EFL learners' and 'EFL' have high occurrences (31 and 21 respectively) as specific instructional settings. The 'classroom environment' (13 occurrences) is affirmed as a critical spatial and social context shaping communicative behaviour within these settings. In terms of demographic, 'students' (16 occurrences) and 'adults' (15 occurrences) frequently co-occurring with affective constructs. Meanwhile 'gender' emerges as significant variable (31 occurrences, 407 link strength) that indicates differential effects based on gender are a persistent and significant research in the field.

This keyword analysis depicts research that correlates WTC is mature and has a clear focus by understanding the drivers of communicative behaviour in EFL contexts. The research has a complete integration of individual psychology (WTC, motivation, enjoyment) with learner demographics (gender, age) and instructional setting (EFL, classroom). WTC serves to be a crucial bridging theory that connects students internal dispositions to external communicative performance. Given the strong presence of demographic variables, it is crucial to further investigate how learner diversity moderates the relationship between WTC, psychological factors and communicative behaviour.

Table 5. The 10 Most Frequent and Central Keywords

Rank	Keyword	Occurrences	Total Link Strength
1	Willingness to Communicate (WTC)	249	347
2	Motivation	33	156
3	Communication	21	186
4	Foreign Language Enjoyment	21	52
5	EFL Learners	31	93
6	Classroom Environment	13	40
7	Students	16	167
8	Adults	15	201
9	Gender (Male/Female)	31	407
10	EFL	21	48

3.3.1 Co-Occurrence Analysis by Clusters

Cluster 1 (red), that integrates 16 keywords, investigates the psychological and affective dimensions in second language acquisition forms. It is surrounded by a spectrum of related affective factors: 1) facilitative factors such as 'motivation', 'foreign language enjoyment', 'grit' and 'self-efficacy' and 2) inhibitory elements like 'language anxiety'. This cluster provides the primary explanatory variables for the central phenomenon of WTC.

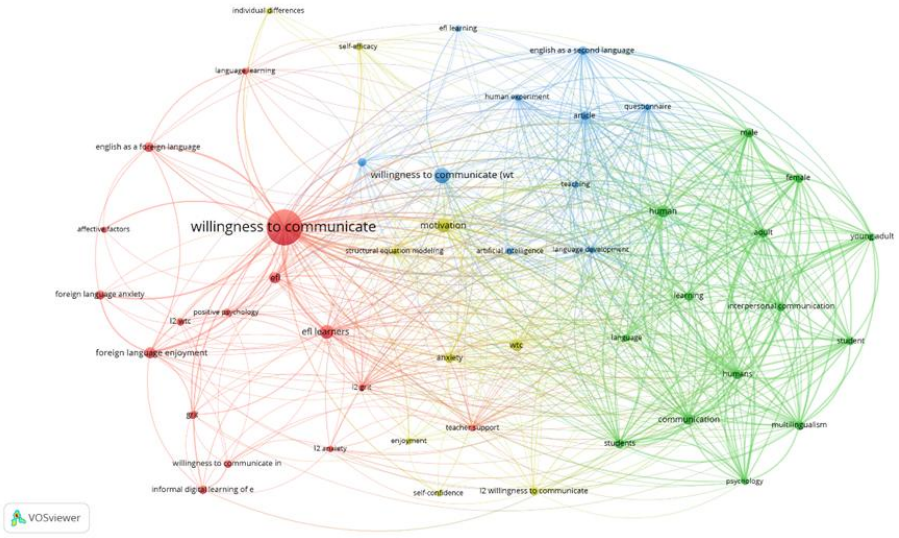


Figure 6. Co-Occurrence Analysis (VOSviewer Visualization)

Cluster 2 (green), that comprises 14 keywords, focuses on learner demographics and communication contexts. Terms such as 'adult learners' and 'gender' emphasizes how demographic variables moderate language acquisition processes. Meanwhile, terms such as 'interpersonal communication' and 'multilingualism' extends the research to the social and interactive dimensions of language use. This suggests an inquiry concerned with communication as a situated social practice rather than an individual psychological outcome. The contrast between Clusters 1 and 2 indicates limited integration between psychological factors and social dimensions of language use.

Cluster 3 (blue), which consists of 10 terms, represents the pragmatic and research framework of the field. It links instructional contexts (classroom environment and teaching) with research tools and methods. From the analysis, 'questionnaire' keyword highlights the predominant instruments for data collection and 'artificial intelligence' shows growing interest in technology-enhanced learning study. This cluster indicates how internal psychological dispositions from cluster 1 manifest in real learning environments and are investigated using established methodological approaches.

Together, the three clusters illustrates that WTC is examined based on psychological and affective factors, demographic and social contexts and applied instructional and methodological frameworks. There is a potential gap in fully integrating individual psychological factors with social and contextual dimensions based on clusters 1 and 2. Future research could benefit from more holistic models that bridge these aspects to provide a comprehensive understanding of communicative behavior.

Table 6. Co-Occurrence Analysis of Keywords on Willingness to Communicate (WTC) in EFL and ESL

Cluster No and Colour	Cluster Label	Number of Keywords	Representative Keywords
Cluster 1 (Red)	Affective & Psychological Factors in EFL	16	'willingness to communicate (WTC)', 'motivation', 'foreign language enjoyment', 'language anxiety', 'grit', 'positive psychology', 'self-efficacy', 'EFL learners'
Cluster 2 (Green)	Learner Demographics & Communication Contexts	14	'adult learners', 'gender', 'interpersonal communication', 'multilingualism'
Cluster 3 (Blue)	Instructional Context & Research Methods	10	'classroom environment', 'teaching', 'artificial intelligence', 'questionnaire', 'structural equation modeling', 'EFL learning'

4. Discussion

This bibliometric study shows that WTC research field has established robust themes but there are significant geographic concentration and emerging theoretical silos. Publications related to WTC nearly doubled from 2024 to 2025, indicating there is significant interest in this field within applied linguistics. The exponential growth reflects a paradigm shift towards affective and psychological factors in language learning that makes WTC as a crucial bridge between learner psychology and communicative competence (Dörnyei & Ryan, 2015; MacIntyre et al., 1998). However, the dominance of publications in Iran and China reveals a geographical imbalance as it could potentially marginalize insights from ESL contexts and other global settings. Based on co-citation and co-occurrence analyses, co-citation patterns confirm a stable theoretical anchored in the ecological and sociocognitive frameworks pioneered by Cao (2011) and foundational scale like Burgoon's (1976) Unwillingness-to-Communicate Scale. The co-occurrence analysis further explains this into three thematic clusters.

The findings also reflect an important theoretical tension within WTC scholarship. While psychological constructs such as motivation, enjoyment and anxiety have become increasingly sophisticated and empirically validated, social and contextual dimensions remain comparatively fragmented across studies. This imbalance suggests that the field continues to privilege individual learner psychology over broader ecological and sociocultural influences. As a result, existing models may insufficiently capture how institutional culture, multilingual realities and power relations shape communicative behaviour in diverse educational settings.

There are gaps in the structural relationship between these clusters. Cluster 1 (affective and psychological factors) represent self-referential core focused on modeling and measuring the internal drivers of WTC. In contrast, cluster 2 (learner demographics and communication contexts) exhibits moderate conceptual distance from this affective core. This separation suggests that research on gender age and social context often runs on a parallel rather than fully integrated in investigating motivation and anxiety. Consequently, while the field is strong in explaining why people communicate (psychological factors), it is less effective in integrating who is communicating and where communication takes place (identity and context) into a single framework. In addition, cluster 3 (instructional context and research methods) highlights a pragmatic strand of research. WTC field of research begins to engage with technological intervention with the emerging presence of artificial intelligence and equation modelling. However, the weak linkage between this cluster (methodological) and cluster 2 (human demographic) suggests that technological and pedagogical innovations may not be consistently informed by nuanced understandings of learner diversity. This suggests that future WTC scholarship should prioritize interdisciplinary frameworks capable of integrating affective, sociocultural and technological dimensions simultaneously. Collectively, these findings not only clarify the intellectual structure and limitations of current WTC research but also point to important theoretical and practical implications for future research and language teaching practice.

4.1 Theoretical Implications

The findings of this bibliometric analysis provide several theoretical implications for future WTC research. The increasing publications between 2016 and 2025 confirms that Willingness to Communicate (WTC) has become an important construct in second language acquisition research. The strong citation links to foundational scholars such as MacIntyre (1998) and Cao (2011) show that ecological and sociocognitive perspectives continue to shape the field.

However, the cluster analysis indicates that WTC research is still somewhat fragmented. Psychological factors such as motivation, anxiety and enjoyment are highly integrated and frequently studied. In contrast, demographic and contextual variables such as gender, age and learning environment are less connected to the main theoretical models. This suggests that existing frameworks explain why learners communicate but they pay less attention to who communicates and under which conditions.

In addition, the strong concentration of studies in Asian and Middle Eastern EFL contexts raises questions about the broader applicability of current WTC models. Since many findings are derived from EFL settings, further research in ESL and multilingual contexts is necessary to strengthen theoretical generalizability.

Finally, the increasing presence of technology and artificial intelligence in recent studies suggests a growing interest in digital communication environments. Therefore, future theoretical models should consider how emotional, contextual and technological factors interact in shaping learners' willingness to communicate. These findings suggest that future WTC research should move beyond variable-based associations toward more integrative and context-sensitive theoretical frameworks.

4.2 Practical Implications

Practically, the findings underscore the importance of designing language learning environments that prioritise affective support and meaningful interaction. Educators in EFL and ESL contexts should adopt pedagogical strategies that reduce anxiety and enhance motivation such as low-stakes speaking activities, collaborative tasks and technology-mediated communication. However, the limited consideration of demographic and contextual variables in existing research suggests that WTC-enhancing practices should be adapted carefully to local learner profiles and sociocultural settings. As digital tools and artificial intelligence gain prominence in language education, teacher training and curriculum development should ensure that technological interventions are pedagogically grounded and responsive to learners' emotional and contextual needs.

4.3 Limitations of the Study

Several limitations should be acknowledged in this bibliometric study. First, the analysis relied solely on the Scopus database, which may exclude relevant publications indexed in Web of Science, ERIC or Google Scholar. Second, only English-language journal articles were included, potentially limiting the representation of non-English scholarship and regional perspectives. Third, bibliometric findings are dependent on database indexing accuracy and citation practices, which may affect network visualization and citation strength. Despite these limitations, the study provides a comprehensive overview of major research trends and intellectual structures within WTC scholarship from 2016 to 2025.

5. Conclusion

This bibliometric analysis clearly maps the intellectual landscape of WTC research in EFL and ESL contexts from 2016 to 2025. The findings reveal that WTC has evolved with a stable theoretical foundation rooted in ecological, sociocognitive and affective frameworks. In addition, the findings also reveal that affective and psychological factors play a crucial role in shaping communicative behavior. However, there are structural imbalances that require attention. The geographical concentration of research in specific EFL contexts raises

concerns about the global generalizability of dominant models while cluster-level analyses indicate limited integration between psychological, demographic and instructional strands of inquiry. Furthermore, the increasing research that engage with technological intervention are not always aligned with nuanced understandings of learner identity, social context and diversity. Therefore, future WTC research would benefit from greater cross-contextual validation and more integrative theoretical models that connect affective mechanisms with demographic realities and pedagogical practice. Future WTC scholarship should therefore move toward interdisciplinary and context-sensitive models that integrate psychological, sociocultural and technological dimensions rather than treating them as isolated strands of inquiry. By bridging these research strands, WTC study can move toward a more comprehensive and context-sensitive understanding in ensuring the continued relevance of WTC across diverse global language learning environments.

Acknowledgements

We would like to thank INTI International University, Malaysia for funding this study under the INTI IU Research Grant 2025: INTI-FELA-02-12-2025.

Author contributions

SKMY: conception and design of work; FSCY: data analysis and drafting the article; LSP: interpretation of data; DSMS: critical revision of the article; MZM: supervision; E: formatting and rewording

Funding

INTI International University

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Sciedu Press.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

Open access

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

AI Declaration

The authors used artificial intelligence (AI)-assisted tools for limited language refinement and grammatical editing during manuscript preparation. All conceptual development, data analysis, interpretation and reference verification were conducted solely by the authors. The authors take full responsibility for the accuracy, integrity and originality of the manuscript.

References

Al-Hoorie, A. H. (2018). The L2 motivational self system: A meta-analysis. *Studies in Second Language Learning and Teaching, 8*(4), 721-754. https://doi.org/10.14746/ssllt.2018.8.4.2

Al-Murtadha, M. (2019). Enhancing EFL learners' willingness to communicate with visualization and goal-setting activities. *TESOL Quarterly, 53*(1), 133-157. https://doi.org/10.1002/tesq.474

Al-Murtadha, M. A. (2021). The relationships among self-reported and observed first language and second language willingness to communicate and academic achievement. Language, *Culture and Curriculum, 34*(1), 80-94. https://doi.org/10.1080/07908318.2020.1727495

Alrabai, F. (2024). Modeling the relationship between classroom emotions, motivation, and learner willingness to communicate in EFL: Applying a holistic approach of positive psychology in SLA research. *Journal of Multilingual and Multicultural Development, 45*(7), 2465-2483. https://doi.org/10.1080/01434632.2022.2053138

Baker, S. C. (2000). The role of gender and immersion in communication and second language orientations. *Language Learning, 50*(2), 311-341. https://doi.org/10.1111/0023-8333.00119

Baker, S. C. (2003). The role of gender and immersion in communication and second language orientations. *Language Learning, 53*(1), 65-96. https://doi.org/10.1111/0023-8333.00224

Baran-Łucarz, M. (2014). The link between pronunciation anxiety and willingness to communicate in the foreign-language classroom: The Polish EFL context. *Canadian Modern Language Review, 70*(4), 445-473. https://doi.org/10.3138/cmlr.2666

Bensalem, E., Thompson, A. S., & Alenazi, F. (2025). The role of grit and enjoyment in EFL learners' willingness to communicate in Saudi Arabia and Morocco: A cross-cultural study. *Journal of Multilingual and Multicultural Development, 46*(3), 749-764. https://doi.org/10.1080/01434632.2023.2200750

Benson, P. (2011). Language learning and teaching beyond the classroom: An introduction to the field. In *Beyond the language classroom* (pp. 7-16). London: Palgrave Macmillan UK. https://doi.org/10.1057/9780230306790_2

Bernales, C. (2016). Towards a comprehensive concept of willingness to communicate: Learners' predicted and self-reported participation in the foreign language classroom. *System, 56*, 1-12. https://doi.org/10.1016/j.system.2015.11.002

Botes, E. L., Dewaele, J. M., & Greiff, S. (2020). The power to improve: Effects of multilingualism and perceived proficiency on enjoyment and anxiety in foreign language learning. *European Journal of Applied Linguistics, 8*(2), 279-306. https://doi.org/10.1515/eujal-2020-0003

Botes, E., Dewaele, J. M., & Greiff, S. (2021). The development and validation of the short form of the foreign language enjoyment scale. *The Modern Language Journal, 105*(4), 858-876. https://doi.org/10.1111/modl.12741

Botes, E., Dewaele, J. M., & Greiff, S. (2022a). Taking stock: A meta-analysis of the effects of foreign language enjoyment. *Studies in Second Language Learning and Teaching, 12*(2), 205-232. https://doi.org/10.14746/ssllt.2022.12.2.3

Botes, E., Van der Westhuizen, L., Dewaele, J. M., MacIntyre, P., & Greiff, S. (2022b). Validating the short-form foreign language classroom anxiety scale. *Applied Linguistics, 43*(5), 1006-1033. https://doi.org/10.1093/applin/amac018

Boudreau, C., MacIntyre, P., & Dewaele, J. M. (2018). Enjoyment and anxiety in second language communication: An idiodynamic approach. *Studies in Second Language Learning and Teaching, 8*(1), 149-170. https://doi.org/10.14746/ssllt.2018.8.1.7

Bramer, W. M., de Jonge, G. B., Rethlefsen, M. L., Mast, F., & Kleijnen, J. (2018). A systematic approach to searching: An efficient and complete method to develop literature searches. *Journal of the Medical Library Association, 106*(4), 531-541. https://doi.org/10.5195/jmla.2018.283

Buckingham, L., & Alpaslan, R. S. (2017). Promoting speaking proficiency and willingness to communicate in Turkish young learners of English through asynchronous computer-mediated practice. *System, 65*, 25-37. https://doi.org/10.1016/j.system.2016.12.016

Burgoon, J. K. (1976). The unwillingness-to-communicate scale: Development and validation. *Communication Monographs, 43*(1), 60-69. https://doi.org/10.1080/03637757609375916

Cameron, D. (2015). 'In New Zealand I feel more confidence': The role of context in the willingness to communicate (WTC) of migrant Iranian English language learners. *International Journal of English Studies, 15*(2), 61-80. https://doi.org/10.6018/ijes/2015/2/202981

Canale, M., & Swain, M. (1980). Theoretical bases of communicative approaches to second language teaching and testing. *Applied Linguistics, 1*(1), 1-47. https://doi.org/10.1093/applin/1.1.1

Cao, Y. (2011). Investigating situational willingness to communicate within second language classrooms from an ecological perspective. *System, 39*(4), 468-479. https://doi.org/10.1016/j.system.2011.10.016

Cao, Y. (2014). A sociocognitive perspective on second language classroom willingness to communicate. *Tesol Quarterly, 48*(4), 789-814. https://doi.org/10.1002/tesq.155

Cao, Y., & Philp, J. (2006). Interactional context and willingness to communicate: A comparison of behavior in whole class, group and dyadic interaction. *System, 34*(4), 480-493. https://doi.org/10.1016/j.system.2006.05.002

Chen, L., & Shuib, T. R. (2026). *Communicative Language Teaching (CLT) in EFL classrooms: A systematic review of pedagogical effectiveness and classroom implementation. International Journal of Research and Scientific Innovation, 13(1). 651-660*. https://doi.org/10.51244/ijrsi.2026.13010056

Chunliu, X., & Guangsheng, L. (2025). *The effectiveness of task-based language teaching in improving communicative competence. International Journal of Advanced and Applied Sciences, 12(1). 263-273*. https://doi.org/10.21833/ijaas.2025.01.025

Clément, R., Baker, S. C., & MacIntyre, P. D. (2003). Willingness to communicate in a second language: The effects of context, norms,

and vitality. *Journal of Language and Social Psychology, 22*(2), 190-209. https://doi.org/10.1177/0261927x03022002003

Clément, R., Dörnyei, Z., & Noels, K. A. (1994). Motivation, self-confidence, and group cohesion in the foreign language classroom. *Language Learning, 44*(3), 417-448. https://doi.org/10.1111/j.1467-1770.1994.tb01113.x

Credé, M., Tynan, M. C., & Harms, P. D. (2017). Much ado about grit: A meta-analytic synthesis of the grit literature. *Journal of Personality and Social Psychology, 113*(3), 492-511. https://doi.org/10.1037/pspp0000102

Cui, Z., Yang, H., & Xu, H. (2025). The effects of interaction scenarios, technology acceptance, and willingness to communicate with AI in EFL contexts. *Behavioral Sciences, 15*(10), 1391. https://doi.org/10.3390/bs15101391

Denies, K., Yashima, T., & Janssen, R. (2015). Classroom versus societal willingness to communicate: Investigating French as a second language in Flanders. *The Modern Language Journal, 99*(4), 718-739. https://doi.org/10.1111/modl.12276

Dewaele, J. M. (2019). The effect of classroom emotions, attitudes toward English, and teacher behavior on willingness to communicate among English foreign language learners. *Journal of language and social psychology, 38*(4), 523-535. https://doi.org/10.1177/0261927x19864996

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research, 133*, 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070

Dörnyei, Z., & Ryan, S. (2015). *The psychology of the language learner revisited. Routledge*. https://doi.org/10.4324/9781315779553

Ellis, R. (2003). *Task-based language learning and teaching. Oxford University Press*. https://doi.org/10.4000/apliut.3696

Fallah, N. (2014). Willingness to communicate in English, communication self-confidence, motivation, shyness and teacher immediacy among Iranian English-major undergraduates: A structural equation modeling approach. *Learning and Individual Differences, 30*, 140-147. https://doi.org/10.1016/j.lindif.2013.12.006

Kang, S. J. (2005). Dynamic emergence of situational willingness to communicate in a second language. *System, 33*(2), 277-292. https://doi.org/10.1016/j.system.2004.10.004

Lee, J. S. (2022). The role of grit and classroom enjoyment in EFL learners' willingness to communicate. *Journal of Multilingual and Multicultural Development, 43*(5), 452-468. https://doi.org/10.1080/01434632.2020.1746319

Léger, D. de S., & Storch, N. (2009). Learners' perceptions and attitudes: Implications for willingness to communicate in an L2 classroom. *System, 37*(2), 269-285. https://doi.org/10.1016/j.system.2009.01.001

MacIntyre, P. D., Clément, R., Dörnyei, Z., & Noels, K. A. (1998). Conceptualizing willingness to communicate in a second language: A situational model of L2 confidence and affiliation. *The Modern Language Journal, 82*(4), 545-562. https://doi.org/10.1111/j.1540-4781.1998.tb05543.x

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., … Moher, D. (2021). *The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ, 372, n71*. https://doi.org/10.1136/bmj.n71

Richards, J. C., & Rodgers, T. S. (2014). *Approaches and methods in language teaching (3rd ed.). Cambridge University Press*. https://doi.org/10.1017/9781009024532

Wider, W., Fauzi, M. A., Gan, S. W., Yap, C. C., Akmal Bin Ahmad Khadri, M. W., & Maidin, S. S. (2023). *A bibliometric analysis of emerging adulthood in the context of higher education institutions: A psychological perspectives. Heliyon, 9(6), e16988*. https://doi.org/10.1016/j.heliyon.2023.e16988

Xiao, Z., & Jia, J. (2025). Emotional intelligence, foreign language enjoyment, and L2 willingness to communicate. *Behavioral Sciences, 15*(11), 1508. https://doi.org/10.3390/bs15111508

Yang, Y., Cui, Y., & Yao, S. (2024). Teacher support, grit and L2 willingness to communicate: The mediating role of foreign language enjoyment. *BMC Psychology, 12*, 383. https://doi.org/10.1186/s40359-024-01877-5

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods, 18*(3), 429-472. https://doi.org/10.1177/1094428114562629