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Developmental trajectories of key research themes in English speaking anxiety research in china (1996- 2024): A Bibliometric analysis

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Abstract

Anxiety, a well-documented affective variable in foreign language acquisition, exerts detrimental effects on linguistic performance and educational attainment. This bibliometric investigation systematically examines 479 Chinese studies on English speaking anxiety indexed in the China National Knowledge Infrastructure (CNKI) from 1996 to 2024, employing CiteSpace 6.3.R1 for knowledge domain visualization. The analysis identifies three evolutionary phases: nascent exploration (1996-2010), accelerated expansion (2011-2021), and progressive decline (2022-2024), characterized by publication output fluctuations. Research foci concentrate on areas including linguistic fluency enhancement, speech pedagogy, oral competence development, and anxiety regulation. Co-citation network analysis further reveals fragmented scholarly collaboration patterns, with no sustained research consortium observed. Future investigations can be further prioritized in four dimensions: cross-ethnic comparative studies, multilingual cognitive interactions, interdisciplinary paradigm integration, and dyadic teacher-student interaction dynamics. Such multidimensional approaches could yield differentiated pedagogical interventions tailored to specific learner profiles. The findings offer empirically-grounded guidelines for curriculum design optimization in Chinese EFL (English as a Foreign Language) contexts.

Keywords: Speaking anxiety; cite space; bibliometric investigation; pedagogical intervention

Introduction

Anxiety, as a pivotal affective factor, significantly influences foreign language learning outcomes (Qu, 2013) ^[7]. Moderate anxiety has a positive effect on oral expression. Horwitz *et al.*'s (1986) ^[1] seminal work established foreign language anxiety as a distinct psychological construct (Zhang & Guo, 2018) ^[9] through their widely-applied Foreign Language Classroom Anxiety Scale (FLCAS), catalyzing systematic inquiry into this phenomenon (Liu, 2020) ^[5]. Chinese scholars have conducted systematic investigations into English speaking anxiety since the mid-1980s (Horwitz *et al.*, 1986) ^[1], exploring its etiology through diverse theoretical lenses. Contemporary research reveals critical insights: Ye's (2024) ^[8] empirical work identifies instructional behaviors as stronger predictors of speaking anxiety than learners' linguistic competence, while Zhao and Duan's (2023) ^[11] tripartite framework attributes anxiety sources to learner characteristics, peer dynamics, and pedagogical practices in digital learning environments. Mounting empirical investigations into anxiety's psycholinguistic dimensions have propelled sustained scrutiny of speaking anxiety's pedagogical consequences, intensifying demands for evidence-based mitigation protocols. This investigation employs CiteSpace's knowledge domain visualization to delineate evolving research trajectories within English speaking anxiety in China (1996-2024), yielding context-specific pedagogical strategies.

Materials and Methods

This study employs CiteSpace 6.3.R1's knowledge mapping tools to visualize intellectual structures in Chinese English speaking anxiety research, analyzing 479 peer-reviewed journal articles from CNKI (1996-2024). Using subject search terms "speaking" and "anxiety", we retrieved 937 initial publications, excluding 458 non-conforming entries (conference papers/off-topic studies) through rigorous screening.

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Bibliometric data (full-text metadata and citation networks) were processed via CNKI's native export module in Refworks format for temporal-conceptual analysis.

Results

This article first employed CiteSpace 6.3.R1 to systematically review the overall development trend of English speaking anxiety research in China from a macro perspective. Through the analysis of the frequency, clustering, and chronological order, it explored research hotspots and topic changes over the past two decades. Then, the analysis of keyword bursts was utilized to identify emerging research hotspots and future prospects. Finally, combined with the current situation of speaking anxiety, feasible suggestions were put forward for English speaking teaching.

Data Analysis Overall Trend

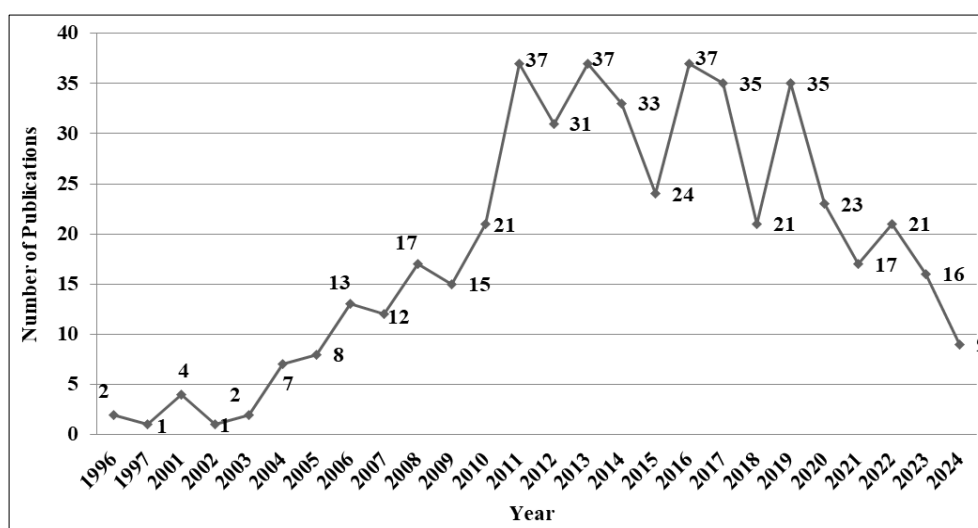


Fig 1: Temporal Distribution of English Speaking Anxiety Publications in Chinese Academia (1996-2024)

Three interconnected factors emerge from the analysis of publication trends in English speaking anxiety research in China:

First, the lack of academic accumulation and infrastructure development. During the formative exploration stage (1996-2010) suffered from insufficient methodological infrastructure and technological integration in EFL pedagogy. Subsequent multimedia advancements (2011-2021) stimulated a 123% increase in annual publication averages (peaking at 37 articles in 2020), reflecting enhanced research capacity.

Second, the impact of the pandemic on English teaching and related research. COVID-19's disruption (2020-2022) necessitated abrupt digital transitions in interactive speaking instruction. Technological constraints in virtual environments exacerbated anxiety manifestation while concurrently restricting longitudinal investigations, contributing to the 2022-2024 decline.

Third, the 2021 "Double Reduction" Policy (officially titled "Opinions on Reducing Homework and Off-campus Training Burdens in Compulsory Education", issued by the CPC Central Committee and the State Council) redirected scholarly focus toward psycholinguistic well-being and adaptive pedagogy. This policy shock temporarily reversed publication decline through increased empirical validation of policy efficacy in anxiety reduction, evidenced by an 17.6% rebound in 2022 publications.

Publication volume serves as a critical empirical indicator of research engagement within the field. This bibliometric analysis of 479 peer-reviewed articles on Chinese English speaking anxiety (CNKI, 1996-2024) reveals a nonlinear developmental trajectory (Figure 1).

Three distinct phases emerge

- 1. Formative Exploration (1996-2010):** Annual outputs remained below 17 articles, reflecting nascent scholarly interest and theoretical underdevelopment.
- 2. Accelerated Expansion (2011-2021):** Volatile growth (range: 21-37) three times peaked in 2011, 2013 and 2016 (37 publications), indicating intensified yet unstable academic engagement.
- 3. Progressive Contraction (2022-2024):** Steady decline signals diminishing research prioritization, potentially suggesting theoretical saturation or shifting disciplinary foci.

Publishing Authors

Co-authorship network analysis of 278 contributing scholars via CiteSpace 6.3.R1 reveals fragmented collaboration patterns in Chinese English speaking anxiety research (Figure 2). The network density score of 0.0018 and mere 68 collaborative linkages indicate predominant solitary scholarship. Productivity analysis identifies Yang Meng as the most prolific contributor (7 publications), specializing in fluency optimization strategies, followed by Qi Yan (3 publications) investigating lexical chunk pedagogy in tertiary education. 32 scholars, including Ding Xiaolin and Jin Chengda, demonstrate marginal engagement (2 publications each). In general, there are not many connections among the above-mentioned publishing authors, indicating that the cooperation is relatively scattered, and a large-scale research team has not been formed. Most authors have few publications and lack in-depth cooperation and communication, which may lead to problems such as insufficient research depth and strong subjectivity. This is not conducive to the formation of a research network in the field of domestic speaking anxiety. Therefore, cooperation methods such as regularly holding academic seminars in various places can be used to increase the cooperation frequency of researchers, form a closely-cooperating research group, share research resources and results, and promote the sustainable development of research in this field.

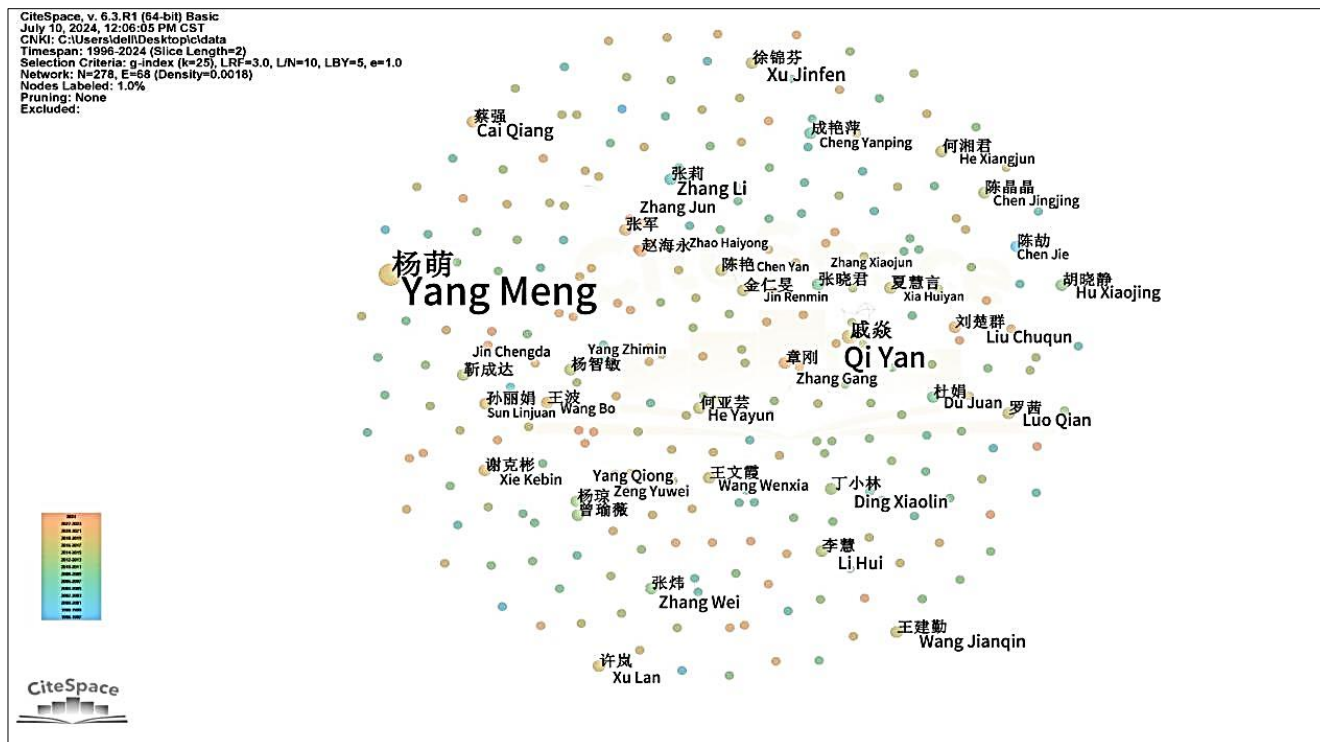


Fig 2: Collaboration Network Analysis of English Speaking Anxiety Research Authors in Chinese Academia (1996-2024)

Research Hotspots

The co-occurrence of keywords is a valuable tool for identifying research hotspots within a specific period. By analyzing the keywords of 479 literature from 1996 to 2024, the research hotspots in the relevant field were identified.

As shown in Figure 3, firstly, among all keywords, "Anxiety", "English Speaking", "Speaking Anxiety", "Speaking Teaching", and "Foreign Language Anxiety" have the largest nodes, suggesting that speaking anxiety has become a current research hotspot and is closely related to other keywords. Additionally, keywords such as "Affective

Factor", "Countermeasures", "Language Anxiety", and "Fluency" also have relatively large nodes, indicating a growing attention to speaking anxiety in speaking teaching, with more scholars conducting targeted explorations. Secondly, the keyword "College Student" has a relatively high frequency, indicating that research on speaking anxiety in college English classrooms is more prominent compared to other school-age stages, reflecting the attention and reforms in college English teaching towards this research hotspot.

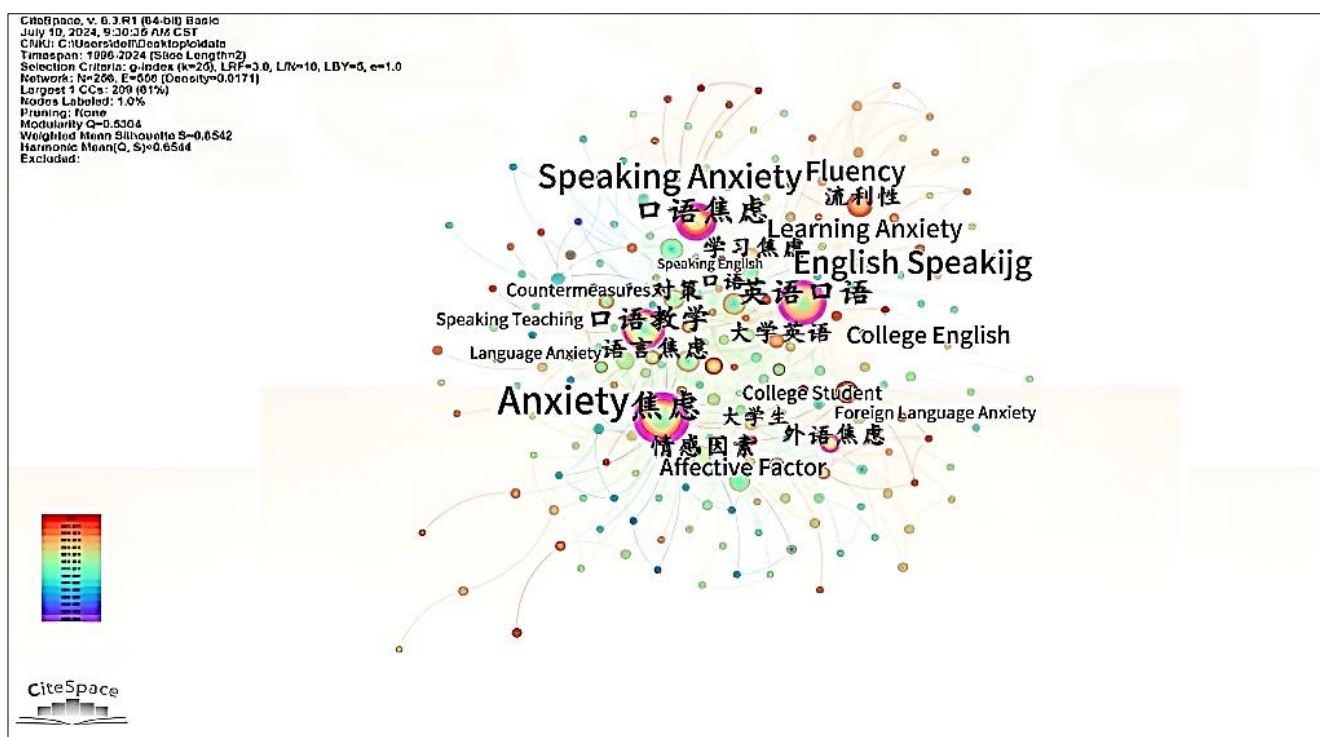


Fig 3: Co-occurrence Map of Keywords of English Speaking Anxiety Research in China (1996-2024)

Keyword clustering analysis via CiteSpace elucidates the conceptual architecture of speaking anxiety research through co-citation network modularization (Figure 4). With modularity $Q=0.5304$ and silhouette $S=0.6544$, the network demonstrates significant community structure (256 nodes, 558 edges), yielding eight principal clusters: #0 foreign language anxiety, #1 speaking anxiety, #2 speaking, #3 speaking teaching, #4 speaking expression, #5 affective factors, #6 fluency, and #7 learning anxiety.

Cluster numeration inversely correlates with conceptual density and research prominence, where lower cluster indices (e.g., #0) encapsulate higher keyword concentrations and greater scholarly attention. The analytical clustering reveals two principal agents in Chinese English speaking anxiety research: pedagogical interventions (Cluster #3: speaking teaching) and learner psychology (Cluster #6: learning anxiety), demonstrating anxiety's pervasive role across instructional and cognitive domains. This bipolar focus underscores the necessity of dual-path mitigation strategies: intrinsic linguistic competence development (e.g., fluency enhancement) and extrinsic pedagogical optimization (e.g., task-based instruction redesign). Building on algorithmic clustering, we consolidate the findings into three research dimensions:

Pedagogical-Clinical Interface (#1, #2, #3, #4 clusters)

Chinese English speaking anxiety scholarship demonstrates tight coupling between classroom practices and anxiety manifestation. Jiang's (2015) [4] empirical work identifies task-based instruction as critical for mitigating "anxiety-inducing classroom ecologies". This necessitates curriculum

reforms prioritizing naturalistic speaking expression through anxiety-sensitive discourse frameworks, adaptive feedback mechanisms and teacher training in psycholinguistic cue recognition.

Psycho-Affective Dynamics (#0, #5, #6 clusters)

The affective paradox of English anxiety emerges clearly: Zhou's (2007) [12] optimal anxiety threshold theory identifies moderate stress as facilitative, while Zhang's (2006) [10] seminal work positioned English anxiety as a critical psycho-affective mediator influencing foreign language acquisition outcomes, advocating for systematic interventions to mitigate anxiety levels and enhance English proficiency. These foundational insights illuminate the emotional mechanism of speaking anxiety.

Fluency-Centered Assessment (#7 cluster)

A robust inverse correlation exists between English speaking anxiety levels and oral proficiency scores, establishing assessment criteria as critical psychometric regulators of learner anxiety. Fluency metrics emerge as pivotal diagnostic-prognostic indicators, with Jiang and Dai's (2019) [2] 14-dimensional framework explaining 75% of speaking score variance. This dual functionality establishes oral fluency as both a reliable metric for assessing speaking competence and a critical intervention target for anxiety mitigation. Therefore, strengthening the research on fluency will enable the creation of validated evaluation systems, ultimately fostering anxiety-sensitive pedagogical interventions that address both linguistic competence and affective regulation.

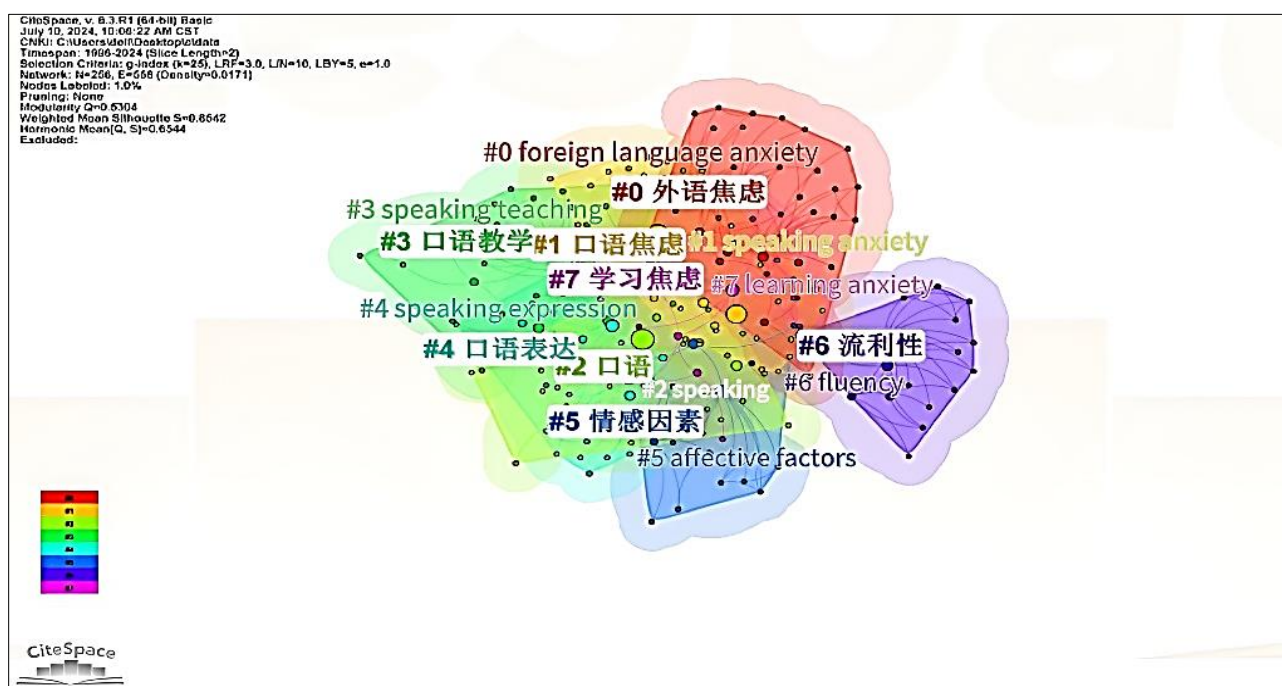


Fig 4: Keyword Clustering Map of English Speaking Anxiety in China (1996-2024)

Research Frontiers

Keyword burst analysis identifies temporal research frontiers by tracking keyword emergence intensity within defined periods. Using CiteSpace's burstness algorithm ($\gamma=1.0$ to maximize temporal sensitivity, other parameters default), we analyzed 479 Chinese English speaking anxiety studies, revealing five significant keyword bursts (Figure 5).

As delineated in Figure 5, keyword burst analysis of Chinese English speaking anxiety research (1996-2024) identifies five emergent thematic foci, revealing critical temporal and conceptual shifts:

First, in terms of burst strength, "fluency" exhibits the strongest burst intensity (7.24, 2016-2024), underscoring its dual role as a linguistic competence benchmark and anxiety moderator. "Countermeasures" ranks second (4.94, 2010-

2013), reflecting early scholarly prioritization of intervention strategies, such as cooperative learning protocols shown to reduce classroom anxiety (Jiang & Tian, 2013) [3]. "Accuracy" follows (4.03, 2016-2021), aligning with China's pedagogical shift toward precision-oriented oral assessment frameworks.

Second, in terms of burst time, the earliest bursts ("anxiety," "countermeasures") mark initial recognition of speaking anxiety as a distinct research domain. Early studies established causal links between instructional practices (e.g., error correction, questioning, task difficulty modulation (Zou, 2020)) [13] and learner affect. Therefore, optimizing

these teaching strategies is conducive to stimulating students' learning interests and thus alleviating their anxiety. Finally, in terms of development prospects, "fluency" and "accuracy" remain prominent (2016-present), driven by national curriculum reforms prioritizing communicative competence, indicating that these two research hotspots are relatively new and have received extensive attention from scholars, with great research potential and development prospects. These patterns highlight China's unique EFL anxiety landscape, where macro-level policy shifts and micro-level classroom practices co-evolve, necessitating longitudinal studies to track adaptive teaching frameworks.

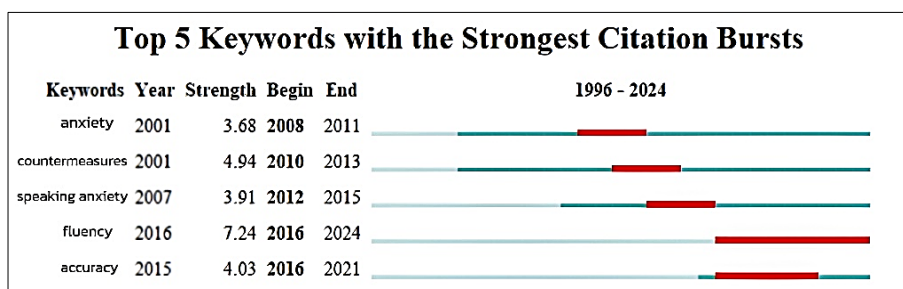


Fig 5: Keyword Burst Map of English Speaking Anxiety Research in China (1996-2024)

Research Directions: The keyword timeline analysis (Figure 6) delineates three evolutionary phases in Chinese English speaking anxiety research (1996-2024), mapping 256 keywords to conceptual trajectories:

Foundational Conceptualization (1996-2010)

Core constructs ("speaking", "speaking expression", "anxiety") emerged as early as 2001, forming Clusters #2 (speaking), #3 (speaking teaching), and #4 (speaking expression). Nascent clusters #6 (fluency) and #7 (learning anxiety) although appearing later, were gradually formed and initiated theoretical groundwork for later empirical validation.

Accelerated Expansion (2011-2021)

Except for #4 speaking expression, #5 affective factors, and #7 learning anxiety, the remaining clusters continued to receive attention from the academic community.

Consolidation & Emergence (2022-2024)

Themes such as "longitudinal study" in the "speaking anxiety" cluster, "review" in the "speaking" cluster, and "Presentation-Assimilation-Discussion-Detailed (PADD) class" (exemplifies China's shift toward hybrid pedagogies blending didactic instruction with peer-mediated critical thinking) in the "speaking teaching" cluster have continued to this day and may become emerging themes in this field.

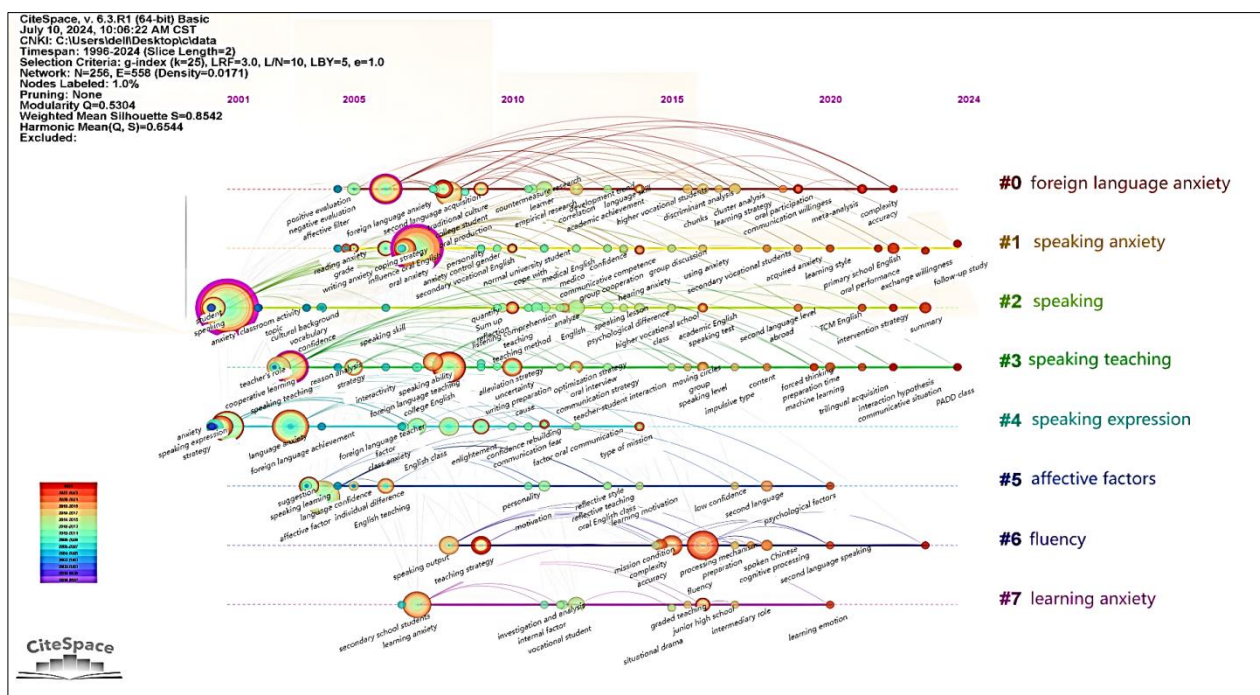


Fig 6: Keyword Timeline Map of English Speaking Anxiety Research in China (1996-2024)

Discussion

This article filled critical gaps in the existing literature through two key contributions: First, it integrated a comprehensive analysis of multiple aspects in CiteSpace, including publication trends, author co - occurrence, keyword co - occurrence, clustering, bursts, and timeline maps, to summarize the evolution of research hotspots and trends in this field in China from a temporal perspective. Second, in the face of the current research situation of insufficient attention and few connections among publishing authors, targeted suggestions were put forward on research objects, methods and perspectives. These suggestions were presented and explained in detail with the aid of relevant charts, thereby providing an innovative outlook for future research directions.

Conclusion

This study employs CiteSpace 6.3.R1 to conduct a multidimensional analysis of 479 peer-reviewed articles on English speaking anxiety from the CNKI database (1996-2024), mapping evolutionary trends through publication dynamics, author collaboration networks, keyword clustering, and temporal trajectories. While significant progress has been made in understanding fluency optimization and pedagogical interventions, three strategic directions emerge to advance the field systematically.

First, expanding research demographics and linguistic diversity is critical. Current studies predominantly focus on Chinese university students, neglecting K-12 learners and ethnic minority populations. Furthermore, most investigations center on English, despite China's growing demand for multilingual competencies. Extending research to L2 French, German, and Japanese contexts could validate MacIntyre's Pyramid Model of Willingness to Communicate (WTC) across languages, where anxiety mediates L2 confidence and communicative behaviors (Lou & Zhao, 2024) ^[6]. Therefore, expanding the scope of learners and languages helps to conduct more comprehensive research on speaking anxiety.

Second, interdisciplinary synthesis must be prioritized. Existing research is mostly confined within the English discipline, lacking integration with other disciplines. However, foreign language learning inherently intersects with multiple disciplines – for instance, pedagogical adjustments informed by cognitive load theory may holistically enhance L2 acquisition outcomes. Such integration would foster methodological innovation (e.g., neuroimaging validation of anxiety mechanisms) and advance unified theoretical frameworks for speaking anxiety research.

Finally, multi-perspective interaction analysis requires systematization. On the one hand, research from the teacher-student interaction perspective should be strengthened.

From the keyword burst and clustering analysis, it can be seen that the teaching process is a two-way interaction jointly participated by teachers and students. Although existing research involves multiple perspectives, more attention needs to be paid to considering the dual perspectives of teachers and students. Only by fully considering students' emotional experiences when improving teaching strategies and optimizing teaching methods while enhancing students' speaking ability can the research perspective be more comprehensive and in-depth. On the other hand, comparative research from Chinese and

international perspectives should be strengthened. By analyzing the similarities and differences in speaking anxiety at home and abroad, learning from international experience, and reflecting on the domestic situation can contribute to the in-depth research development in this field.

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