



Short-form video and microlearning in English language education: A bibliometric and science mapping review

Thi My Linh Tran¹, and Huy Hoang Doan²

¹Thuongmai University, Hanoi, Vietnam (ORCID: 0009-0002-1910-6414)

²Thuongmai University, Hanoi, Vietnam (ORCID: 0000-0002-8920-3298)

Corresponding Author: Huy Hoang Doan, hoang.dh@tmu.edu.vn

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Abstract

Short-form video platforms, particularly TikTok, have altered how second language learners encounter and process linguistic input. Individual studies have examined specific aspects of microlearning in second language contexts, yet, to the authors' knowledge, no bibliometric analysis has mapped the intellectual structure of this emerging subfield. This study maps the publication landscape, thematic clusters, and research gaps characterizing microlearning research in English language education through short-form video platforms. We conducted a hybrid bibliometric analysis of 80 Scopus-indexed documents published between 2004 and 2026. Performance analysis was performed using Biblioshiny (R), and science mapping was executed through VOSviewer. The bibliometric outputs were then interpreted through a qualitative synthesis using the Theory, Context, Characteristics, and Methodology framework. Three principal patterns emerged. First, scholars from developing Asian economies, including Malaysia, Hong Kong, China, and Indonesia, contributed the largest share of publications, whereas traditional Western academic centers produced comparatively fewer studies. Second, the thematic clusters concentrated on phonological production and vocabulary acquisition, with limited attention to academic writing or reading comprehension. Third, qualitative and experimental designs together accounted for approximately two-thirds of the corpus, while computational learning analytics appeared only peripherally in the keyword co-occurrence network. This bibliometric review maps the knowledge structure of a rapidly expanding subfield at the intersection of educational technology and applied linguistics. The findings point to a need for longitudinal experimental designs, methodological diversification toward learning analytics, and empirical investigation of how algorithmic recommendation systems mediate L2 input delivery.

Keywords: Educational technology; Microlearning; Second language acquisition; Short-form video; TCCM framework

1. Introduction

Autonomous language learning has shifted from static instructional software toward algorithm-driven mobile environments where learners interact with short-form video content (Godwin-Jones, 2019). Guo et al. (2024) documented that computer-assisted language learning increasingly operates through distributed mobile platforms rather than desktop-based systems. This shift raises empirical questions about how fragmented digital input affects English language education processes across diverse learner populations (Higgins, 1983).

Microlearning, defined as the delivery of focused, self-contained educational units that address specific learning objectives within brief time frames, typically under five minutes (Leong et al., 2021), has gained traction within these digital environments. Beyond temporal brevity, microlearning is characterized by instructional granularity, learner control over pacing, and modular design that enables flexible sequencing. Short-video formats may reduce extraneous cognitive load by segmenting complex linguistic structures into discrete chunks, thereby facilitating initial encoding (Liu, 2024). Prolonged exposure to short-form media is associated with reduced sustained attention among adolescent populations (Reid Chassiakos et al., 2016; Siebers et al., 2022). Whether microlearning functions as an effective compensatory mechanism or merely a superficial engagement tool thus remains an open empirical question.

Research on specific platforms has produced localized findings. Montero Perez et al. (2018) found that algorithmic exposure to targeted vocabulary items predicted higher immediate recall scores among adolescent learners. Other studies reported positive effects on pronunciation modeling (Cahyani et al., 2025; Saed et al., 2021) and speaking fluency (Erydani et al., 2025; Hongsa

et al., 2023). Short-form video platforms appear to motivate learners through entertainment-driven formats designed to maximize engagement (Lee, 2023; Saito & Akiyama, 2017). These individual investigations, however, do not capture the broader intellectual structure of the discipline. Isolated experimental studies cannot illustrate how pedagogical theories evolve across the field or where critical gaps persist.

Bibliometric methods offer a macroscopic perspective by quantifying the intellectual connections between studies within a research domain (Donthu et al., 2021). Existing reviews of technology-mediated language learning have typically evaluated localized teaching interventions rather than mapping global publication patterns (Barrot, 2022; Perez et al., 2023; Zhang et al., 2022). Sankaranarayanan et al. (2023) conducted a bibliometric analysis of microlearning across educational contexts using 208 Scopus documents, identifying four major themes including design, implementation, evaluation, and mobile-based delivery. Hasumi and Chiu (2024) mapped technology-enhanced language learning using 1,816 Web of Science publications, highlighting the growing influence of mobile-assisted language learning and digital game-based approaches. Neither study, however, specifically examined the intersection of short-form video platforms and English language education. Without such mapping, researchers risk duplicating efforts or overlooking interdisciplinary connections between computer science, educational psychology, and applied linguistics (Çeken & Taşkın, 2022; Noetel et al., 2021). Bibliometric methods are particularly suited to this task because they detect structural patterns that narrative reviews cannot capture, including the geographic distribution of research activity, the formation and dissolution of thematic clusters over time, and the systematic identification of absent topics that a field has collectively overlooked. Science mapping complements performance analysis by producing visual representations of knowledge structures, enabling researchers to locate both the intellectual core and the peripheral frontiers of a research domain (Donthu et al., 2021).

We define the TikTok-ization of English education as the integration of algorithm-driven, ultra-short-video formats into formal and informal language curricula across geographical regions. TikTok surpassed approximately 1.99 billion monthly active users globally by early 2026 (Kemp, 2025), with the highest adoption rates among users aged 16 to 24, positioning the platform as a primary content channel for the demographic most commonly enrolled in formal language programs. Wang and Curran (2025) reported shifts in classroom dynamics, noting that learners engage with multiple digital formats in ways that extend beyond simple technology adoption. Despite this integration, no quantitative science mapping of the keyword clusters and co-citation networks associated with microlearning in English language education currently exists. Existing bibliometric studies in adjacent domains, including Rahman et al. (2024) analysis of AI in language learning using 606 Scopus documents and Hou and Yu (2023) mapping of synchronous computer-mediated communication with 1,292 publications, have indicated the value of large-scale bibliometric approaches for identifying thematic structures and research gaps. The absence of a comparable analysis for the specific intersection of short-form video and English language education represents a gap in the literature that this study addresses.

The contribution of this study is threefold. First, it provides, to the authors' knowledge, the first bibliometric mapping dedicated to short-form video-based microlearning in L2 contexts, complementing broader analyses that subsume this topic under general educational technology or social media categories. Second, it applies the TCCM framework, a structured analytical lens widely employed in business and management reviews (Paul et al., 2024) but rarely applied in applied linguistics, to organize the qualitative dimensions of the corpus. Third, it identifies specific research gaps organized by TCCM dimensions, offering a structured agenda rather than a general call for further research.

This study conducts a bibliometric review and science mapping analysis of microlearning within English language education to map how the scientific literature on short-form video-based language learning has evolved. Four research questions guide the investigation:

RQ 1) How has research on microlearning in English language education evolved in terms of annual publication output, leading journals, and geographical distribution?

RQ 2) What are the most influential and highly cited studies shaping the intellectual base of this subfield?

RQ 3) What thematic clusters and emerging trends characterize the current knowledge structure?

RQ 4) What research gaps does thematic mapping expose, and what future directions can be proposed?

2. Methodology

2.1. Research Design

Bibliometric analysis is a quantitative methodology that evaluates the structural evolution of academic disciplines over time (Donthu et al., 2021). We adopted a hybrid analytical framework integrating performance analysis and science mapping. Performance analysis quantifies publication productivity across geographic regions and institutional affiliations, while science mapping visualizes the intellectual architecture through relational networks between cited documents and co-occurring keywords (Van Eck & Waltman, 2010). Paul et al. (2024) argued that framework-based reviews employing structured approaches such as TCCM produce more impactful contributions than purely narrative reviews. Therefore, the study applied the TCCM framework to synthesize the bibliometric outputs into a qualitative interpretive analysis.

2.2. Database and Search Strategy

The Scopus database was selected because it provides broader coverage of educational technology and applied linguistics journals compared to Web of Science alone (Pranckutė, 2021). We constructed a search string combining variations of English language teaching with terms reflecting microlearning, short-form video, and algorithmic platforms. The search string included Boolean operators linking terms such as “English language learning,” “EFL,” and “TikTok,” “short-form video,” “micro-learning,” “microlearning,” and “bite-sized learning.” The search queried document titles, abstracts, and author keywords to capture publications referencing short-form video formats and bite-sized pedagogical interventions within language learning contexts. The search was intentionally broad to capture the full range of terminology used across different national and disciplinary traditions, as researchers in educational technology and applied linguistics often employ different labels for overlapping phenomena.

The search strategy intentionally combined platform-specific terms (TikTok, Douyin, Instagram Reels, YouTube Shorts) with general microlearning terms (microlearning, bite-sized learning) to capture the full scope of research examining fragmented digital content in English language education. This inclusive approach reflects the reality that platform-specific and platform-agnostic microlearning studies share theoretical foundations in cognitive load theory and multimedia learning, and they frequently cite each other. Separating these two streams would risk fragmenting a literature that researchers themselves treat as interconnected. We acknowledge, however, that some included studies may address general audiovisual learning or microlearning without reference to specific short-form video platforms.

The Scopus database served as the sole source for three reasons. First, Scopus provides broader coverage of educational technology and applied linguistics journals than Web of Science alone (Pranckutė, 2021). Second, Scopus indexes a wider range of publications from developing Asian economies, which constitute the primary geographic context of this research domain. Third, prior bibliometric studies in adjacent fields relied exclusively on Scopus (Guo et al., 2024; Sankaranarayanan et al., 2023), enabling direct methodological comparability.

The complete search string executed in Scopus on May 15, 2026 was:

TITLE-ABS-KEY(("English language teaching" OR "English language learning" OR "EFL" OR "ESL" OR "TESOL" OR "English as a foreign language" OR "L2 English") AND ("micro-learning" OR "microlearning" OR "short video*" OR "short-form video*" OR "TikTok" OR "Douyin" OR "Instagram Reels" OR "YouTube Shorts" OR "bite-sized learning")) AND (LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "re")) AND (LIMIT-TO(LANGUAGE, "English"))

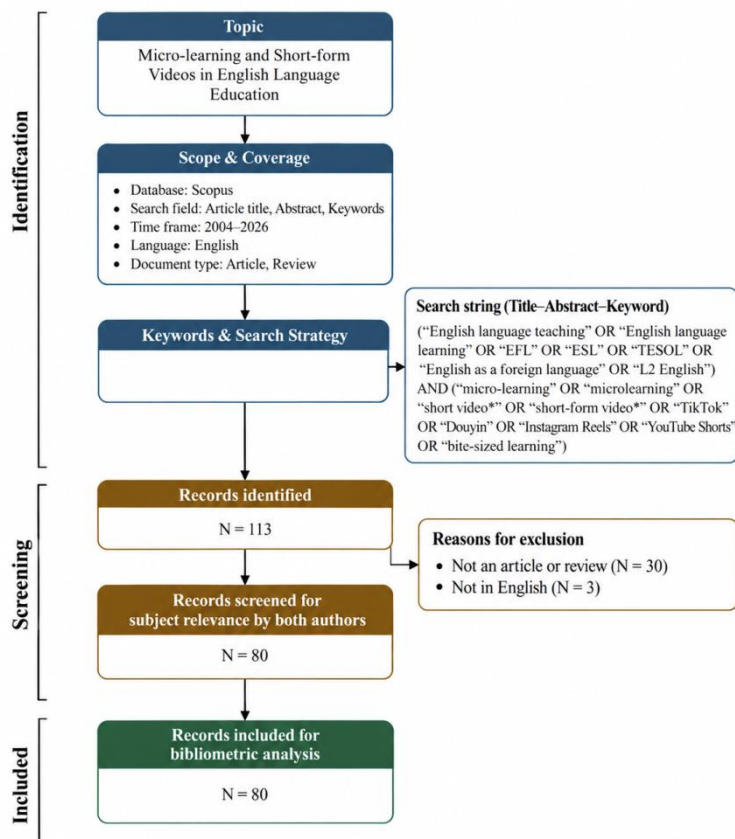
The query targeted titles, abstracts, and author keywords. Document type restrictions to articles and reviews, together with the English language filter, were applied at the search stage rather than during manual screening.

2.3. Screening and Inclusion

We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses [PRISMA] guidelines (Page et al., 2021). The initial search was executed in May 2026, with temporal parameters set from 2004 to 2026. The primary search identified 111 documents. Figure 1 presents the PRISMA flow diagram detailing the identification, screening, and inclusion phases. Table 1 summarizes the inclusion and exclusion criteria applied during the screening phase.

Two researchers independently screened the titles and abstracts of all 111 records against the inclusion criteria specified in Table 1. Each researcher classified records as “include,” “exclude,” or “uncertain.” Disagreements and uncertain cases were resolved through discussion until consensus was reached. The initial agreement rate between the two screeners was 95%. Full-text review was subsequently conducted for all records classified as potentially relevant to verify subject area alignment with the study scope.

Figure 1



Note. Search executed on July 22, 2026. Document type and language filters were applied at the Scopus search stage.

Table 1
Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Document type	Original research articles, review articles	Conference proceedings, book chapters, editorials, notes, errata
Language	English	Non-English publications
Database	Scopus-indexed	Not indexed in Scopus
Subject relevance	Documents addressing short-form video, microlearning, or social media platforms in L2/EFL/ESL acquisition contexts	Documents classified under unrelated subject areas with no educational focus

Applying these criteria removed 33 records from the initial set of 113, yielding a final corpus of 80 documents for analysis.

The relatively small corpus size ($n = 80$) reflects the emergent nature of this research area. Short-form video-based microlearning in L2 contexts first appeared in Scopus-indexed journals around 2019, with rapid growth from five publications in 2022 to 25 in 2025. The accelerating trajectory indicates a field still in its formative phase rather than a limitation of the search strategy.

2.4. Analytical Procedures

We imported the extracted bibliographic data into Biblioshiny (Aria & Cuccurullo, 2017) to process publication frequencies, geographic distributions, and global citation metrics. A three-fields Sankey diagram was generated to map relationships between contributing countries, author keywords, and publication outlets. Biblioshiny's default settings were applied for performance analysis, including fractional counting for multi-authored publications in country-level productivity calculations.

VOSviewer version 1.6.18 (Van Eck & Waltman, 2010) was used to construct keyword co-occurrence networks. The unit of analysis was set to author keywords, and the full counting method was applied. The minimum keyword occurrence threshold was set at two to filter isolated terms while retaining sufficient relational density. This threshold yielded a network of 35 keywords distributed across 77 links. The association strength normalization method was applied to adjust for differences in total keyword frequencies (Van Eck & Waltman, 2010). Cluster identification used VOSviewer's default resolution parameter (1.0) and minimum cluster size (1). The resulting network produced nine thematic clusters. A thematic map was generated using Biblioshiny to classify keywords into four quadrants based on Callon's centrality and density indices (Callon et al., 1991).

The TCCM framework (Paul et al., 2021; Paul & Rosado-Serrano, 2019) was then applied to analyze the qualitative dimensions of the 80 documents. This framework organizes the literature along four dimensions: the dominant theories grounding empirical investigations, the geographical and institutional contexts in which studies are situated, the characteristics of the constructs and variables examined, and the methodological approaches employed.

To operationalize the TCCM framework, we developed a coding protocol. Each of the 80 documents was independently coded by both authors along four dimensions. Theory was coded by identifying the explicit theoretical framework(s) referenced in each study. Context was coded by recording the country of affiliation, educational level, and learner population. Characteristics referred to the linguistic skills targeted and the platform(s) examined. Methodology was coded by classifying each study's research design and data collection instruments. Disagreements between coders were resolved through discussion. The complete coding sheet is available in Supplementary Material. Table 2 provides a comprehensive summary of the included studies ($N = 80$) categorized by theoretical framework, educational level, targeted linguistic skills, and platform investigated.

To assess the stability of the thematic structure, we conducted a sensitivity analysis by varying the minimum keyword occurrence threshold. At the primary threshold of two, the network contained 30 items across nine clusters with 71 links. Raising the threshold to three reduced the network to 10 items and three clusters (71 links reduced to 22), while a threshold of four yielded seven items and two clusters (13 links). Across all three thresholds, the terms "tiktok," "social media," "efl," "microlearning," and "english language teaching" remained present, indicating that the primary thematic core is stable and not an artifact of the low threshold. Peripheral terms such as "speaking skills," "teacher identity," "audiovisual input," and "mobile learning" appeared only at the minimum threshold of two, consistent with their classification as emerging or niche themes in the thematic map. We retained the threshold of two for the primary analysis to preserve these peripheral structures, which are analytically informative for identifying research gaps despite their lower stability. Table 3 summarizes the results of the sensitivity analysis across different occurrence thresholds.

Table 2
Summary of the included studies

Category / Subcategory	<i>n</i>	%
Theoretical Framework		
Not explicitly stated	62	77.5
Affordance Theory	6	7.5
Flipped Learning Model	5	6.3
Cognitive Load Theory	3	3.8
Multimedia Learning Theory	3	3.8
Self-Regulated Learning	2	2.5
Other (TPACK, TAM, SDT, Sociocultural, Input Hypothesis)	5	6.3
Educational Level		
University / Higher Education	41	51.3
Not specified	26	32.5
Secondary Education	9	11.3
Professional / Adult Learners	4	5.0
Targeted Linguistic Skills*		
General / Multiple skills	39	48.8
Speaking	20	25.0
Vocabulary	16	20.0
Grammar	10	12.5
Writing	8	10.0
Pronunciation	8	10.0
Listening	7	8.8
Reading	5	6.3
Platform Investigated*		
TikTok	43	53.8
Non-platform-specific	31	38.8
Instagram	14	17.5
YouTube	13	16.3
Douyin	4	5.0

Table 3
Sensitivity Analysis Results

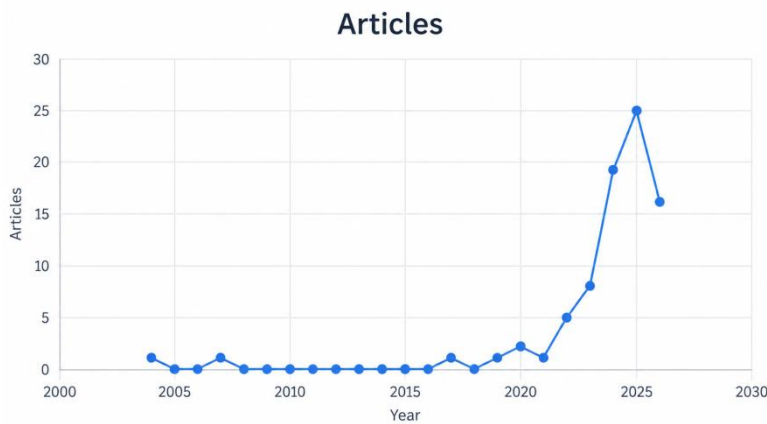
Threshold	Items	Clusters	Links	Core Keywords Retained
Min = 2 (primary)	30	9	71	tiktok, social media, efl, microlearning, english language teaching
Min = 3	10	3	22	tiktok, social media, efl, microlearning, english language teaching
Min = 4	7	2	13	tiktok, social media, efl, microlearning, english language teaching

3. Results

3.1. Publication Trends

Figure 2 tracks the longitudinal distribution of the 80 documents across the study period. Between 2004 and 2018, only two publications appeared in the corpus: Akbulut (2007) on multimedia annotations for vocabulary learning and Rodgers and Webb (2017) on caption effects in television-based listening. These early studies addressed conventional audiovisual media rather than algorithm-driven short-form video platforms. The remaining 78 documents were published from 2019 onward, when TikTok and similar platforms entered the educational research agenda. This prolonged dormancy is consistent with the broader pattern in educational technology research, where new delivery formats typically undergo a latency period of several years between commercial adoption and systematic academic investigation (Donthu et al., 2021).

Figure 2
Annual Publication



Note. The 2026 count ($n = 16$) reflects partial-year indexing.

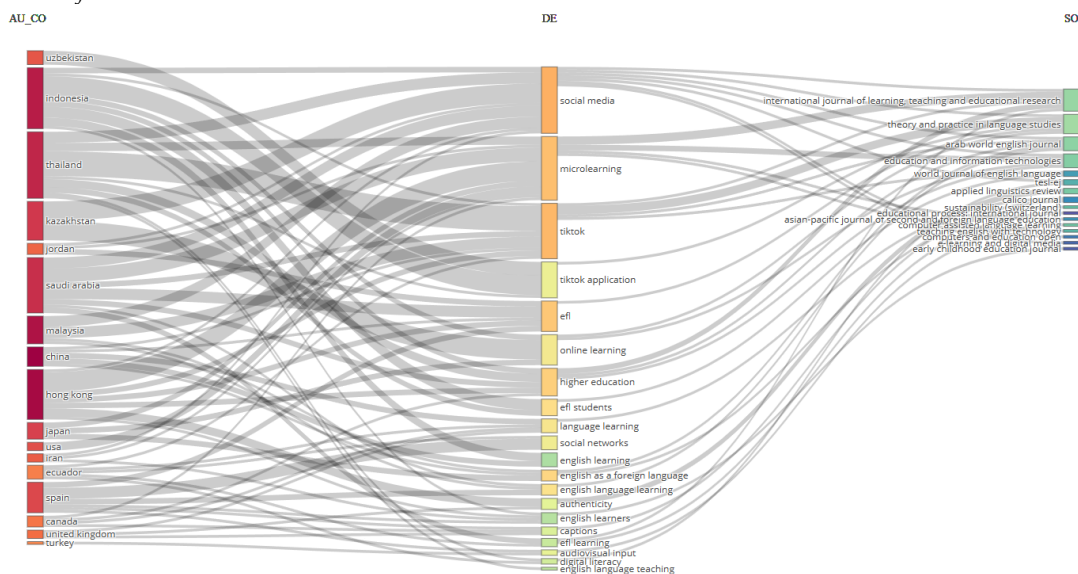
An upward trajectory began in 2021, coinciding with the shift to remote instruction during the COVID-19 pandemic. Annual output increased from five articles in 2022 to 25 in 2025, a fivefold increase over three years. This growth trajectory corresponds with the global expansion of user engagement on short-form video platforms. The acceleration is consistent with patterns observed in adjacent fields. Hasumi and Chiu (2024) documented a similar post-2019 surge in technology-enhanced language learning publications, attributing it to pandemic-driven adoption of digital tools. Sankaranarayanan et al. (2023) also reported a substantial increase in microlearning publications across educational contexts following 2020.

The preliminary 2026 data show 16 articles, a figure likely to increase as indexing for the current year is completed. The sustained output exceeding 15 annual publications across three consecutive years suggests that a specialized subfield has consolidated within the broader digital language learning domain. The transition from zero publications before 2019 to sustained annual output above 15 within six years indicates rapid institutionalization of this research area.

3.2. Geographic Distribution and Publication Outlets

Figure 3 presents the three-fields Sankey diagram connecting contributing countries, author keywords, and publication outlets.

Figure 3
Three-fields Plot



Note. Generated using Biblioshiny. Left field = contributing countries; center field = author keywords; right field = publication outlets. Flow width is proportional to the number of connections between fields.

Tables 4 and Table 5 present the leading contributing countries and publication outlets, respectively. Malaysia (n=18) and Hong Kong (n=18) contributed the highest number of affiliated authorships, followed by China (n=17), Indonesia (n=17), and Thailand (n=15). The concentration of output in Southeast and East Asian institutions, together with contributions from Saudi Arabia, Kazakhstan, and Uzbekistan, confirms that the research landscape is dominated by scholars in developing and emerging economies. Western academic centers, including the United States (n=6), Spain (n=6), and the United Kingdom (n=3), contributed a smaller share. Among publication outlets, *Theory and Practice in Language Studies* (n=5) and *International Journal of Learning, Teaching and Educational Research* (n=4) published the most documents, though *Education and Information Technologies* accumulated the highest citation impact (91 total citations from three documents).

Table 4

Leading Contributing Countries (by affiliation count)

Rank	Country	Affiliation Count	% of Total Affiliations
1	Malaysia	18	10.5
2	Hong Kong	18	10.5
3	China	17	9.9
4	Indonesia	17	9.9
5	Thailand	15	8.8
6	Saudi Arabia	11	6.4
7	Kazakhstan	7	4.1
8	Spain	6	3.5
9	Uzbekistan	6	3.5
10	Japan	6	3.5
11	United States	6	3.5
12	Iran	5	2.9

Table 5

Leading Publication Outlets

Rank	Journal	Documents (n)	Total Citations
1	<i>Theory and Practice in Language Studies</i>	5	6
2	<i>International Journal of Learning, Teaching and Educational Research</i>	4	15
3	<i>Education and Information Technologies</i>	3	91
4	<i>Arab World English Journal</i>	3	8
5	<i>Applied Linguistics Review</i>	2	5
6	<i>Teaching English with Technology</i>	2	14
7	<i>Sustainability</i>	2	37
8	<i>TESOL Quarterly</i>	2	20
9	<i>Computer Assisted Language Learning</i>	2	12
10	<i>TESL-EJ</i>	2	12

The Sankey diagram also revealed that keyword flows from these contributing countries converge on a relatively narrow set of conceptual nodes. Researchers across different national contexts connected primarily to the same keyword clusters, suggesting a degree of thematic convergence despite geographic diversity. However, the connections between national contributions and specific publication outlets indicate some regional preferences. Scholars from Central Asian countries directed manuscripts predominantly toward technology-focused journals, while researchers from East Asian institutions showed more distributed submission patterns across both technology and applied linguistics outlets.

The publication outlet analysis revealed that technology-focused journals, including *Education and Information Technologies* and *Sustainability*, captured a substantial share of the empirical output. Flows also directed manuscripts toward the *Asian-Pacific Journal of Second and Foreign*

Language Education and CALICO Journal. The preference for technology-oriented outlets over conventional applied linguistics journals may suggest that researchers tend to frame microlearning primarily as a digital innovation rather than a linguistic phenomenon. This outlet pattern may also reflect pragmatic submission strategies, as technology-focused journals may offer faster review turnarounds and broader scope definitions that accommodate interdisciplinary work.

3.3. Citation Impact Analysis

Table 6 presents the most highly cited documents within the reviewed corpus.

Table 6

Top Cited Documents

<i>Paper</i>	<i>DOI</i>	<i>Total Citations</i>	<i>TC per Year</i>	<i>Normalized TC</i>
(Akbulut, 2007)	10.1007/s11251-007-9016-7	96	4.8	1
(Rodgers & Webb, 2017)	10.1558/cj.29522	72	7.2	1
(Kohnke et al., 2024)	10.1007/s10639-023-11964-6	43	14.3	6.2
(Tan et al., 2022)	10.3390/su142416876	31	6.2	2.2
(Cahyani et al., 2025)	10.11114/smc.v13i2.7553	29	14.5	6.5
(Meirbekov et al., 2024)	10.1007/s10639-023-12396-y	29	9.7	4.20
(Mohammad Hosseini et al., 2020)	10.32038/ltrq.2020.20.03	25	3.6	1.35
(Gorham et al., 2023)	10.1007/s40692-023-00264-0	21	5.2	2.94
(Hu & Du, 2022)	10.18178/ijiet.2022.12.12.1755	20	4	1.47
(Wang & Curran, 2025)	10.1002/tesq.3354	20	10	4.54

Akbulut (2007) accumulated the highest total citations (96), functioning as the primary anchor for early multimedia language instruction methodologies. Rodgers and Webb (2017) provided secondary historical grounding with 72 total citations through research on audiovisual processing prior to the emergence of social media platforms. The persistence of these older documents indicates that foundational multimedia processing theories continue to inform contemporary experiments despite substantial changes in delivery technology.

Documents published within the past three years exhibited accelerated citation velocities. Kohnke et al. (2024) accumulated 43 citations with a normalized citation score of 6.23, investigating microlearning in professional development contexts. Cahyani et al. (2025) achieved 29 citations and a normalized score of 6.59, mapping TikTok's influence on pronunciation acquisition. Meirbekov et al. (2024) secured 29 citations with a normalized score of 4.21, examining educational technology adoption in Central Asian contexts. Wang and Curran (2025) accumulated 20 citations in TESOL Quarterly with a normalized score of 4.54, analyzing the implications of platformization for online language teaching.

The rapid citation accumulation among recent publications reflects strong demand for empirical evidence on algorithmic platforms within applied linguistics. The normalized citation scores for 2024 and 2025 publications exceeded those of the pre-2020 foundational texts by factors of four to six, suggesting that the field's intellectual center of gravity is shifting from foundational multimedia theory toward platform-specific empirical investigation. This citation pattern also indicates that the subfield has reached a stage where new publications build on and cite each other rapidly, a characteristic of consolidating research fronts (Donthu et al., 2021).

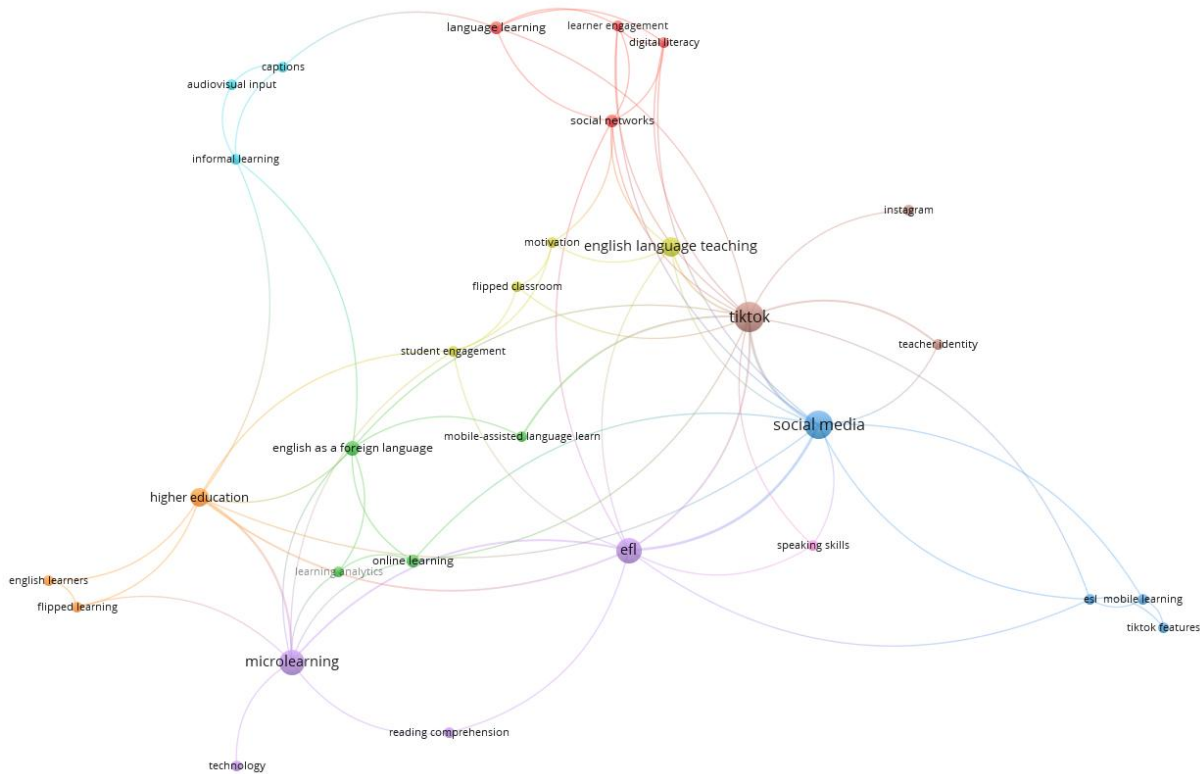
The citation impact analysis reveals a two-tier structure. The first tier consists of foundational works on multimedia learning and audiovisual processing (Akbulut, 2007; Mayer, 2009; Rodgers & Webb, 2017) that provide theoretical legitimacy. The second tier comprises recent platform-specific studies (Kohnke et al., 2024; Tan et al., 2022; Wang & Curran, 2025) that drive current empirical programs. The gap between these tiers, spanning approximately 2008 to 2019, corresponds to the period when short-form video had not yet penetrated the applied linguistics agenda. Future studies that explicitly bridge these tiers by testing foundational multimedia principles within algorithm-driven environments could strengthen the theoretical coherence of the subfield.

3.4. Science Mapping

3.4.1. Keyword Co-occurrence Network

Figure 4 presents the author keyword co-occurrence network. Table 7 categorizes the nine identified clusters with their associated keywords and representative studies.

Figure 4
Network Visualization



Note. Generated using VOSviewer 1.6.18. Node size represents keyword frequency. Link thickness indicates co-occurrence strength. Colors correspond to cluster membership (resolution = 1.0, minimum cluster size = 1). Author keywords, full counting, minimum occurrence = 2, association strength normalization. A thesaurus file was applied to merge variant keyword forms prior to analysis.

Table 7 details the primary thematic clusters identified through the co-occurrence analysis. Cluster 1 (Red) grouped “social media” and “tiktok” alongside “teacher identity,” “instagram,” and “english language teaching.” This co-occurrence indicates that short-form video platforms are examined as environments that reshape educator roles, not merely as content delivery tools. The presence of “teacher identity” within the same cluster as platform-specific terms suggests that algorithmic visibility may increasingly influence how educators construct professional personas (Wang & Curran, 2025).

Cluster 3 (Light Blue) connected “motivation” and “student engagement” with “flipped classroom” and “efl learning,” establishing a link between short-form media and active pedagogical design. Educators may use short-form videos as pre-class materials to reduce the cognitive load associated with initial grammar exposure, reserving synchronous classroom time for communicative practice (Castro-Alonso et al., 2021). Cluster 5 (Purple) positioned “microlearning” alongside “efl,” “reading comprehension,” and “technology,” forming the conceptual core of the field.

Cluster 2 (Green) linked “learning analytics” with “mobile-assisted language learning” and “online learning.” The peripheral position of “learning analytics” within the network is informative. Despite the capacity of algorithmic platforms to generate continuous behavioral data, most studies in the corpus measured engagement through self-reported instruments rather than computational tracking.

Table 7
Thematic Clusters

Cluster	Main Theme	Keywords	Representative Studies
1 (Red)	Digital Platforms and Educator Persona	social media, tiktok, teacher identity, instagram, english language teaching	Wang and Curran (2025), Meirbekov et al. (2024), Tan et al. (2022)
2 (Green)	Digital Ecosystems and Tracking	english as a foreign language, learning analytics, mobile-assisted language learning, online learning, tiktok application	Gorham et al. (2023), Hu and Du (2022)
3 (Light Blue)	Learner Psychology and Active Pedagogies	efl learning, english language learning, flipped classroom, motivation, student engagement	Romanyshyn and Freiuk (2024), Mulyanah et al. (2024)
4 (Yellow)	Social Network Integration	digital literacy, language learning, learner engagement, social networks	Vargas-Saritama and Espinoza-Celi (2026)
5 (Purple)	Core Micro-Pedagogy	efl, microlearning, reading comprehension, technology	Kohnke et al. (2024), Mohammad Hosseini et al. (2020)
6 (Cyan)	Input Modalities and Autonomy	audiovisual input, captions, informal learning	Çekiç (2024), Kaderoğlu (2024)
7 (Orange)	Productive Skills	efl students, english learning, speaking skills	Hongsa et al. (2023), Donny and Adnan (2022)
8 (Brown)	Learner Demographics and Flipped Models	english learners, flipped learning, higher education	Mudra (2025), Shafiee Rad (2023)
9 (Pink)	ESL Mobile Contexts	esl, mobile learning	Tan et al. (2024)

Cluster 7 (Orange) isolated “speaking skills” as the primary linguistic target, co-occurring with “efl students” and “english learning.” Reading and writing competencies lacked representation across all nine clusters. Cluster 6 (Cyan), containing “audiovisual input,” “captions,” and “informal learning,” suggests that learners use these platforms primarily for unstructured listening practice outside formal curricula.

Cluster 8 (Brown) connected “english learners” with “flipped learning” and “higher education,” indicating a subgroup of studies that examine microlearning within formal university settings.

Cluster 9 (Pink), containing only “esl” and “mobile learning,” occupied a peripheral position disconnected from the main network. This isolation suggests that research framed explicitly around English as a second language in mobile contexts has not yet integrated with the dominant EFL-oriented literature.

The overall network structure reveals an important asymmetry. Technology-oriented clusters (Clusters 1, 2, 5) exhibit dense internal connections on the left side of the visualization. Pedagogy-oriented clusters (Clusters 3, 7, 8) show sparser cross-cluster links on the right. This structural pattern implies that technology-focused and pedagogy-focused research streams operate in relative isolation. Bridging these two streams could strengthen the coherence of the field.

Absent keywords are equally informative. Terms related to assessment, standardized testing, or proficiency measurement did not appear in any cluster. This absence suggests that assessment and proficiency measurement are not prominent in the author keyword vocabulary of the corpus. However, this pattern does not definitively demonstrate that these topics have not been studied, as relevant research may employ alternative terminology or may not include assessment-related terms among author keywords. Similarly, “writing,” “grammar,” “syntax,” and “academic English” were absent, confirming the disciplinary concentration on oral skills at the expense of academic literacy.

Clusters containing fewer than four keywords (Clusters 6, 7, 8, and 9) should be interpreted cautiously, as they may represent emerging or peripheral interests rather than consolidated thematic areas. The sensitivity analysis reported confirms that these smaller clusters are less stable than the core groupings.

3.4.2. Thematic Map

Figure 5 presents the thematic map distributing keywords across four quadrants based on centrality and density.

Figure 5

Thematic Map Quadrant



Note. Generated using Biblioshiny based on Callon's centrality and density indices. Upper-right = motor themes (high centrality, high density); upper-left = niche themes; lower-right = basic themes; lower-left = emerging or declining themes.

The upper-right motor quadrant positioned “social media,” “tiktok,” and “efl” as the core terms driving the field. Their high centrality and density suggest that short-form video investigation has become an increasingly visible topic within digital English language education research.

The upper-left niche quadrant contained “authenticity” and “self-branding,” indicating that educator performativity constitutes a specialized thematic area with high internal density but limited connection to the broader network (Bizami et al., 2023; Dang et al., 2024).

The lower-right quadrant held basic transversal themes such as “learning” and “human,” providing general theoretical scaffolding that connects diverse educational technology studies. These terms function as connectors across clusters but lack the specificity needed to drive focused empirical programs. The lower-left quadrant positioned “reading comprehension” near the margin, indicating either an emerging research trajectory or a declining one. This positioning quantitatively confirms the disciplinary concentration on oral skills at the expense of academic literacy.

The four-quadrant distribution, when read together, tells a coherent story about the field's developmental stage. The motor themes (upper-right) indicate that short-form video research has gained increasing centrality within digital English language education. The niche themes (upper-left) indicate that specialized subfields, particularly educator identity research, have developed internal density but remain disconnected from the mainstream. The emerging/declining themes (lower-left) signal where future growth or contraction may occur, with reading comprehension representing a direction that the field has not yet pursued but that applied linguistics more broadly considers essential. The basic themes (lower-right) provide the foundational vocabulary connecting microlearning research to the broader education literature.

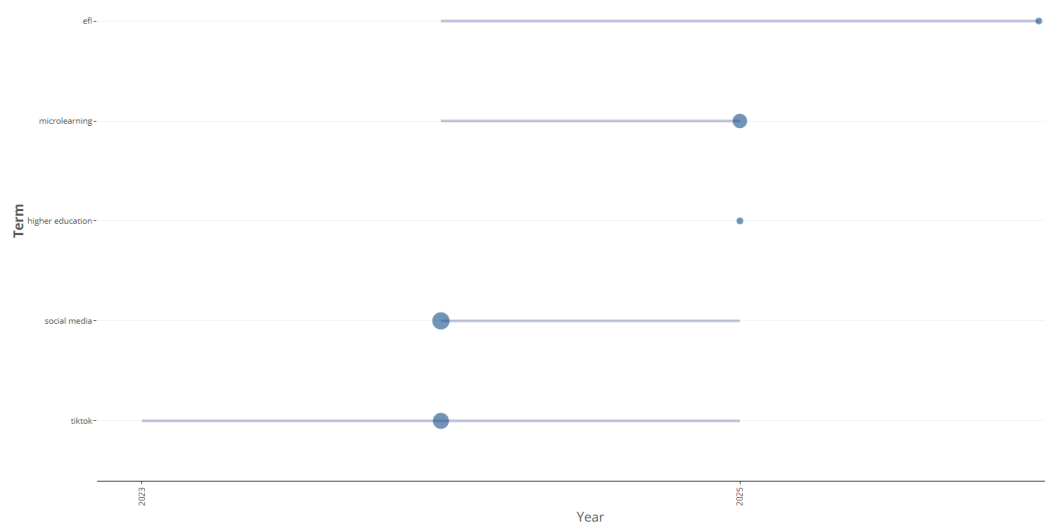
Comparing this thematic structure with adjacent bibliometric studies offers additional context. Hou and Yu (2023) found that synchronous computer-mediated communication research was

concentrated in the United States and China, with heated topics centered on interaction and feedback. Min and Yu (2023) reported that augmented reality in language learning focused on motivation and immersive contexts. The microlearning field's emphasis on teacher identity and self-branding as niche themes distinguishes it from these adjacent areas, suggesting that algorithm-driven platforms introduce a performer-audience dynamic absent from other technology-mediated learning contexts.

3.4.3. Keyword Trend Analysis

Figure 6 maps the temporal evolution of author keywords across the study period.

Figure 6
Trend Topics



Note. Generated using Biblioshiny. The horizontal axis represents publication year. Each bar indicates the period during which an author keyword appeared with a minimum frequency of two. Bar length reflects the temporal span of keyword usage.

The analysis tracked a transition from the broad term “social media,” which dominated until late 2024, toward the platform-specific identifier “tiktok,” which maintained high frequency throughout 2025 and early 2026. This lexical shift indicates that researchers now treat commercial platform architectures as independent variables that may shape L2 processing outcomes rather than generic tools for content delivery. The term “microlearning” consolidated most recently, achieving maximum frequency in the final tracked period, suggesting that scholars have moved from evaluating general digital environments to testing how temporal fragmentation specifically affects working memory in language learners.

The concurrent stabilization of “efl” alongside both “tiktok” and “microlearning” indicates that English as a foreign language remains the primary instructional context in which these investigations are conducted. The trend data did not show comparable emergence of terms for other target languages, suggesting that the microlearning literature is predominantly an EFL phenomenon. Whether these patterns apply to ESL contexts or to the acquisition of languages other than English remains an open question.

The temporal keyword analysis also revealed what is absent from the trend lines. Terms related to assessment, curriculum integration, or institutional policy did not appear in any tracked period. This absence reinforces a pattern visible across the performance analysis and science mapping: the literature has developed around platform description and learner perception without yet addressing the structural question of how institutional curricula should incorporate or regulate algorithmic learning environments.

3.5. Methodological Characteristics of the Included Studies

Table 8 presents the methodological distribution of the 80 included studies.

Table 8
Methodological Distribution of Included Studies

<i>Methodological characteristic and category</i>	<i>n</i>	<i>%</i>
Research design		
Qualitative (case study, content analysis, discourse analysis, thematic analysis)	29	36.3
Experimental (pre-post test, control/treatment groups)	24	30.0
Cross-sectional survey (descriptive, correlational)	12	15.0
Mixed methods	9	11.3
Review/bibliometric	4	5.0
Quasi-experimental	2	2.5
Data collection instruments		
Interview/focus group	26	32.5
Not specified in the abstract	25	31.3
Objective language assessment (pre-/post-test, proficiency test)	19	23.8
Self-report questionnaire (Likert-type, perception scale)	19	23.8
Document/content analysis	6	7.5
Observation	4	5.0
Learning analytics (log data, platform interaction data)	3	3.8

Note. Percentages for research design are based on the full corpus ($N = 80$). For data collection instruments, percentages do not sum to 100% because a study could employ more than one instrument.

Qualitative designs constituted the largest share ($n = 29$, 36.3%), followed by experimental studies ($n = 24$, 30.0%) and cross-sectional surveys ($n = 12$, 15.0%). Mixed-methods approaches accounted for 11.3% ($n = 9$), while quasi-experimental designs appeared in only two studies (2.5%). Regarding data collection instruments, interviews and focus groups were the most frequently used ($n = 26$, 32.5%), followed by objective language assessments ($n = 19$, 23.8%) and self-report questionnaires ($n = 19$, 23.8%). Learning analytics methods appeared in only three studies (3.8%), confirming the peripheral position of computational approaches in the keyword network.

5. Discussion

5.1. Synthesis through the TCCM Framework

The bibliometric analysis produced three principal findings. First, scholars from developing Asian economies contributed the largest share of publications, while traditional Western academic centers were comparatively underrepresented. Second, the thematic clusters concentrated on phonological production and vocabulary acquisition, with academic literacy, assessment, and writing absent from the keyword co-occurrence network. Third, cross-sectional survey designs dominated the corpus, while computational learning analytics appeared only peripherally. Paul et al. (2021) argued that framework-based reviews generate more actionable contributions when they organize findings along structured analytical dimensions. The study applies the TCCM framework below to interpret these three patterns through the lenses of theory, context, characteristics, and methodology.

5.1.1. Theory

Cognitive load theory (Sweller, 1988) was the most frequently cited framework among studies that explicitly referenced a theoretical foundation ($n = 3$), though the majority of studies (77.5%) did not specify a formal theoretical grounding. Short-form videos may mitigate extraneous cognitive load by segmenting complex linguistic structures into discrete chunks that learners can process within working memory constraints (Castro-Alonso et al., 2021; Rey et al., 2019; Skulmowski & Xu, 2022). This theoretical framing is consistent with the segmenting effect documented in multimedia learning research, where dividing continuous instructional material into smaller units tends to improve learning outcomes.

Multimedia learning theory (Mayer, 2009) served as a complementary framework, explaining

how synchronized audiovisual input engages dual processing channels with independent but limited capacities. Godwin-Jones (2019) noted that educational creators often align kinetic text captions with spoken vocabulary to stimulate both visual and auditory pathways. Research on TikTok's algorithmic personalization suggests that the platform's recommendation system creates highly individualized content streams, which may intensify engagement but also raise questions about the uniformity of linguistic input across learners (Montag et al., 2021; Siles et al., 2024).

A theoretical gap persists regarding long-term retention. Current frameworks explain initial exposure and encoding but do not account for how fragmented digital input transitions into durable syntactic competence. Ellis (2002) argued that frequency of exposure is critical for implicit language acquisition. Microlearning formats, however, may not provide the sustained and systematic repetition necessary for procedural memory consolidation (Khong & Kabilan, 2022; McCauley & Christiansen, 2019). Montero Perez (2022) similarly noted that while audiovisual input supports vocabulary recognition, evidence for its effectiveness in promoting deeper grammatical knowledge remains limited.

A related concern involves the attentional consequences of habitual short-form video consumption. Meirbekov et al. (2024) examined TikTok's impact on academic performance in Central Asian educational settings, reporting mixed findings that highlight the tension between engagement benefits and attentional costs. Siebers et al. (2022) found that social media use was associated with increased distraction among adolescents, raising the possibility that the same platform features that attract learners may simultaneously undermine the sustained concentration needed for deeper L2 processing. Cognitive load theory, as currently applied in the corpus, does not address this paradox. A format that reduces per-segment cognitive load may simultaneously train learners to expect constant novelty, potentially reducing their tolerance for the extended processing that complex grammar acquisition requires.

This disconnect suggests that the field may benefit from integrating cognitive load models with frequency-based acquisition theories and attentional regulation frameworks to construct a more complete account of how short-form video exposure contributes to, or constrains, long-term L2 development. Theories of self-regulated learning, which examine how learners monitor and control their own cognitive processes, could complement existing frameworks by addressing the metacognitive dimensions of algorithmic learning environments.

5.1.2. Context

The performance analysis indicated that researchers from developing Asian economies produced the largest share of publications. This pattern likely reflects the mobile-first learning cultures prevalent in Indonesia, Thailand, and Central Asia, where learners access digital content primarily through smartphones rather than institutional desktop infrastructure (Ngampornchai & Adams, 2016; Setiawan et al., 2021). Guo et al. (2024) similarly identified Asian nations as dominant contributors in collaborative mobile-assisted language learning research, suggesting that the geographic concentration observed here extends beyond the TikTok-specific literature.

Short-form video platforms may function as compensatory tools in contexts where access to native English speakers or trained instructors is limited (Godwin-Jones, 2019). Erydani et al. (2025) and Hongsa et al. (2023) documented how TikTok provides autonomous access to pronunciation models for learners in underserved areas. Alharthy (2025) found that Saudi students who engaged with TikTok daily acquired vocabulary more effectively than those relying on traditional methods, with 99% of surveyed participants reporting perceived improvement. However, the same study identified challenges including distraction, misinformation, and overexposure to informal registers, suggesting that the compensatory function of algorithmic platforms is accompanied by risks that vary across institutional contexts.

This contextual dimension suggests that the geographic concentration may be linked to the technological affordances of mobile-first environments where traditional educational infrastructure is scarce. Budiarta and Akmar (2024) documented how Indonesian students used TikTok's algorithmic content recommendations for autonomous vocabulary practice, employing

strategies such as saving videos and revisiting saved content, a finding that illustrates how platform affordances interact with learner behavior in resource-constrained settings.

The concentration also raises a question about the generalizability of existing findings. Nearly all studies in the corpus examined EFL learners in Asian or Middle Eastern educational settings. Whether the reported effects on vocabulary acquisition and pronunciation transfer to European, Latin American, or Sub-Saharan African populations with different digital infrastructure conditions, linguistic distances from English, and institutional support structures has not been tested. Feng and Chen (2022) noted a similar geographic clustering in their bibliometric analysis of mobile-assisted second language learning, where attention on themes related to technology was concentrated in East and Southeast Asian contexts. Future research conducted in underrepresented regions could test the boundary conditions of current findings and expand the contextual diversity of the evidence base.

5.1.3. *Characteristics*

The science mapping exposed a pronounced concentration of studies on phonological production and discrete vocabulary acquisition. The keyword co-occurrence network positioned “speaking skills” as the primary linguistic target, while reading comprehension and academic writing were not prominently represented in the author keyword network. Zhang et al. (2022) identified a similar pattern in their review of short-video research for foreign language learning, noting that productive oral skills dominated the literature over a full decade of research. This concentration appears to be a defining characteristic of the microlearning subfield rather than an artifact of the search parameters.

This concentration may, in part, be attributable to the format constraints of short-form video. Brief durations structurally limit the sustained cognitive engagement that complex text comprehension and extended written argumentation require (Barrot, 2022). Budiasa et al. (2021) observed that learners using social media platforms rapidly acquire informal vocabulary and slang but encounter difficulty when attempting formal composition tasks. Alharthy (2025) reported that while the vast majority of surveyed students perceived vocabulary gains through TikTok, concerns about overexposure to informal language and the absence of structured grammar instruction persisted. These findings suggest that the platform's affordances align well with receptive and imitative skills but may be less suited to the productive demands of academic discourse.

The vocabulary emphasis is further reinforced by the types of research instruments employed. Studies in the corpus predominantly measured vocabulary recognition through multiple-choice tests or self-reported questionnaire items, instruments that capture discrete lexical knowledge but not the ability to deploy vocabulary within connected discourse. The difference between recognizing a word in isolation and using it accurately in a written argument or oral presentation represents a qualitative distinction that the current methodological toolkit does not adequately address. Alshreef and Khadawardi (2023) found positive student perceptions of TikTok for vocabulary learning, but the descriptive survey design could not establish whether perceived gains corresponded to measurable improvement on standardized proficiency assessments.

The thematic mapping also revealed the emergence of “self-branding” and “authenticity” as characteristics of the educator role within algorithmic environments. Wang and Curran (2025) argued that platformization requires language teachers to compete for views alongside entertainment content creators, fundamentally altering the power dynamics of online instruction. Su (2023) documented the tension between teachers' professional identity and the performative demands of digital content creation. Traditional academic credentials may carry less weight within these environments than the indicated ability to maintain viewer engagement (Bizami et al., 2023; Dang et al., 2024). This finding represents a distinctive characteristic of the microlearning field that separates it from other technology-mediated learning research, where teacher identity is typically examined in relation to pedagogical competence rather than algorithmic visibility.

Educators may, as a result, need to redefine their classroom function, shifting from primary content deliverers to analytical facilitators who help learners navigate and critically evaluate

unstructured digital input. Whether this role transformation affects instructional quality, teacher wellbeing, or learner outcomes is an empirical question that the current literature has identified but not systematically investigated. The niche positioning of these terms in the thematic map suggests that while researchers have recognized the phenomenon, it has not yet generated the sustained empirical attention that its practical implications warrant.

5.1.4. Methodology

The methodological distribution indicates that the reviewed literature combines qualitative exploration with intervention-oriented research. This diversity allows researchers to examine both learners' experiences and changes in language performance. However, the presence of experimental studies does not, by itself, establish the strength of the causal evidence. Such judgments require closer examination of group allocation, comparison conditions, measurement quality, intervention duration, and follow-up assessments. The distinction between experimental and quasi-experimental categories should therefore be interpreted according to the coding criteria used in this review.

The corpus exhibits methodological diversity, with qualitative designs (36.3%) and experimental studies (30.0%) together accounting for approximately two-thirds of all studies. Kohnke et al. (2024) relied on self-reported questionnaires to measure perceived engagement following short-form video exposure, a design representative of the broader pattern. While such instruments capture learner attitudes and perceptions, they do not objectively verify linguistic skill acquisition over extended periods. Alshreef and Khadawardi (2023) and Budiarta and Akmar (2024) similarly used descriptive survey methodologies to investigate learner perceptions of TikTok for vocabulary learning, producing positive attitudinal findings but no pre-post performance measurement.

The peripheral position of "learning analytics" in the keyword network quantitatively confirms this methodological pattern. Agbo et al. (2021) and Di Mitri et al. (2018) have argued that computational approaches, including machine learning protocols for tracking interaction metrics, are necessary for evaluating dynamic digital learning environments. The absence of such methods from the motor themes quadrant suggests that applied linguists have not yet adopted the computational tools required to analyze the behavioral data that algorithmic platforms continuously generate. Rahman et al. (2024) noted in their bibliometric analysis of AI in language learning that although analytical tools exist to measure learning outcomes computationally, adoption in the applied linguistics community has been slow relative to fields such as computer science education.

A related methodological limitation concerns research design diversity. Quasi-experimental studies with pre-post designs appeared in the corpus, but sample sizes were typically small and intervention periods short. Cheng (2024) tested short-video effectiveness on Chinese language skills over eight weeks with 60 students, finding significant improvements in listening, speaking, and comprehensive abilities, but such time frames may be insufficient to capture durability effects. Alshreef and Khadawardi (2023) employed a descriptive quantitative approach with 115 female students to investigate perceptions of TikTok for vocabulary learning, producing positive attitudinal data but no objective proficiency measures. Longitudinal designs tracking learner outcomes over multiple semesters remain absent from the corpus.

The methodological landscape also reveals a disciplinary boundary issue. The computational methods needed to analyze platform-generated data, including machine learning classification, sequence analysis of interaction logs, and natural language processing of learner output, belong to disciplines such as computer science and data science that are not well represented among the authors in this corpus. Rahman et al. (2024) noted that although AI-powered analytical tools have become available for language learning research, their adoption among applied linguists has been slow relative to the pace of technological change. Interdisciplinary collaboration between applied linguists and computational researchers could accelerate methodological diversification in this area.

Mixed-methods approaches combining computational analytics with qualitative case studies represent a particularly promising direction. Such designs could pair platform interaction data with in-depth interviews to capture both what learners do on algorithmic platforms and how they interpret those experiences, producing a richer empirical foundation than either approach alone.

The absence of assessment-related keywords from the co-occurrence network may suggest that outcome measurement has not been a central concern in the author keyword vocabulary of this corpus, though content-level analysis of individual studies would be needed to confirm this pattern.

5.1.5 Implications for Practice and Policy

The findings carry several practical implications for language educators and curriculum designers. The geographic and thematic patterns suggest that short-form video platforms are already functioning as de facto instructional tools in regions where formal language teaching infrastructure is limited. Rather than resisting this trend, educators may benefit from developing structured frameworks that incorporate algorithmic content into existing curricula while compensating for the platform's limitations in academic literacy development. Pre-class vocabulary exposure through curated short-form videos, followed by in-class activities targeting writing and reading comprehension, represents one possible integration model consistent with the flipped classroom approaches identified in the thematic clusters.

For policymakers and institutional administrators, the methodological findings highlight a gap between the pace of platform adoption and the capacity to evaluate its educational outcomes. The absence of assessment-related terms from the keyword network may suggest that systematic outcome evaluation has not kept pace with platform adoption in this research area. If this pattern reflects institutional practice, developing guidelines that require outcome measurement alongside platform integration could help ensure that pedagogical decisions are informed by evidence. Developing institutional guidelines that require outcome measurement alongside platform adoption could ensure that pedagogical decisions are informed by evidence rather than driven by technological novelty alone.

5.2. Future Research Agenda

The bibliometric and TCCM analyses point to several directions for future inquiry, organized by the dimension of the framework they address.

5.2.1. Theoretical Development

The gap between initial encoding and long-term retention requires sustained attention. Current cognitive load models explain why short-form content facilitates initial processing, but they do not predict whether such processing leads to durable L2 competence. Longitudinal experimental designs measuring syntactic development over periods exceeding one academic semester could test whether microlearning exposure produces lasting grammatical gains or merely transient vocabulary recognition. Integrating usage-based acquisition theories (Ellis, 2002) with cognitive load frameworks may offer a more complete theoretical account.

5.2.2. Contextual Expansion

The geographic concentration in the corpus limits the generalizability of current findings. Research conducted in European, Latin American, and Sub-Saharan African educational settings, where digital infrastructure, linguistic distance from English, and institutional support structures differ markedly from the Asian and Middle Eastern contexts dominating the corpus, would test the boundary conditions of existing evidence. Comparative studies across different mobile adoption contexts could clarify whether the compensatory function of short-form platforms depends on specific infrastructural conditions or whether it operates similarly across diverse educational environments.

The contextual dimension also extends to learner demographics. The corpus primarily examined university-level EFL students, with limited attention to K-12 populations, adult learners,

or heritage language learners. Sankaranarayanan et al. (2023) specifically recommended expanding microlearning research to K-12 settings, where developmental differences in cognitive processing and digital literacy may moderate the effects of short-form video exposure. Additionally, the near-exclusive focus on English as the target language limits what can be inferred about microlearning's effectiveness for typologically distant language pairs. Studies targeting languages with different writing systems, morphological complexity, or phonological structures could reveal whether the vocabulary and pronunciation gains reported for English transfer to other L2 contexts. Related school-based research has examined collaborative English video creation among Japanese sixth graders, reporting enjoyment and perceived confidence alongside language-production and time-management challenges (Okumura, 2026); such findings provide a contextual comparison rather than evidence of TikTok-specific effects.

5.2.3. *Construct Breadth*

The disciplinary concentration on pronunciation and vocabulary suggests a need for research targeting academic literacy. Studies that measure whether extended microlearning exposure affects formal writing competence or sustained reading comprehension would broaden the empirical base. This direction is particularly relevant for university-level language programs where academic discourse skills, including argumentation, critical reading, and genre-specific writing, constitute core learning outcomes that isolated vocabulary gains do not address.

5.2.4. *Methodological Advancement*

The methodological reliance on cross-sectional surveys presents an opportunity for computational approaches. Learning analytics and natural language processing tools could objectively assess spontaneous verbal production and written output during and after platform-mediated learning episodes. Such methods would complement existing attitudinal data with behavioral evidence. The integration of platform-generated interaction data, including watch time, replay frequency, and content completion rates, with standardized linguistic proficiency measures could produce a richer understanding of the relationship between engagement patterns and learning outcomes.

Research designs that triangulate multiple data sources are particularly needed. Combining algorithmic interaction logs with think-aloud protocols, for instance, could reveal not only what learners do on short-form video platforms but also how they process linguistic input during viewing. Pre-registered experimental designs with adequate sample sizes and control conditions would strengthen the causal claims that the field is currently unable to make on the basis of cross-sectional survey data alone. Quasi-experimental studies with matched comparison groups receiving alternative digital interventions, rather than traditional instruction only, could isolate the specific contribution of short-form video features such as algorithmic personalization, temporal constraints, and audiovisual synchronization.

5.2.5. *Educator Identity and Ethics*

The emergence of teacher identity and self-branding as thematic clusters raises questions about the psychological consequences of algorithmic performativity for language educators. Research examining how the demands of content creation affect educator wellbeing, pedagogical decision-making, and professional identity formation would address a gap that the current literature has identified structurally but not empirically investigated. Qualitative interview studies with language educators who create short-form video content could capture the lived experience of navigating algorithmic visibility pressures alongside institutional teaching responsibilities.

Ethical dimensions of data extraction from algorithmic platforms similarly warrant formal examination. Commercial applications collect detailed behavioral data from learners, including viewing patterns, engagement duration, content preferences, and sometimes location information, often without transparent protocols regarding data storage and use. When educators assign TikTok-based learning activities within institutional settings, the ethical boundaries between educational purpose and commercial data collection become blurred. Applied linguists could contribute to developing ethical frameworks governing the integration of commercial platforms

into institutional language programs, an area where educational policy has not kept pace with the speed of technological adoption.

A related ethical concern involves the quality and accuracy of linguistic input that algorithmic feeds deliver. Unlike curated educational materials that undergo editorial review, short-form video content created by non-expert users may contain pronunciation errors, grammatical inaccuracies, or culturally inappropriate language use. The algorithmic recommendation system prioritizes engagement metrics rather than pedagogical accuracy, creating a structural incentive that may not align with educational objectives. Future research could investigate the frequency and nature of linguistic inaccuracies in popular language learning content on TikTok and assess whether learners can distinguish between reliable and unreliable linguistic models without instructor guidance.

6. Conclusion

This study mapped the knowledge structure of microlearning in English language education through a hybrid bibliometric analysis of 80 Scopus-indexed documents, integrating performance metrics from Biblioshiny, network visualization from VOSviewer, and a qualitative synthesis through the TCCM framework. Three principal patterns emerged: scholars from developing Asian economies contributed the majority of publications, likely reflecting mobile-first digital cultures; thematic clusters concentrated on phonological production and vocabulary acquisition while academic literacy and assessment-related keywords were absent from the network; and cross-sectional survey designs dominated the methodological landscape, with computational learning analytics and longitudinal experimental approaches remaining peripheral.

The TCCM synthesis revealed that cognitive load theory and multimedia learning theory provided the primary theoretical foundations, yet gaps persist regarding long-term retention and the attentional consequences of habitual short-form consumption. We proposed five research directions organized by TCCM dimensions: theoretical integration of cognitive load and frequency-based acquisition models, contextual expansion to underrepresented regions, empirical investigation of the vocabulary-to-discourse gap in academic literacy, methodological diversification toward computational analytics and pre-registered designs, and ethical examination of data practices and content accuracy in commercial platform integration.

Several limitations apply. The exclusive use of Scopus may have excluded relevant publications indexed in other databases. ERIC indexes practitioner-oriented publications that Scopus may not cover, and Dimensions captures grey literature that could provide earlier signals of emerging research trajectories. The language restriction to English omitted research published in Chinese on the Douyin platform. The corpus of 80 documents, while consistent with the emergent status of this subfield, constrains the generalizability of the network analysis. Future bibliometric studies could incorporate multiple databases and multilingual metadata to produce a broader mapping of this rapidly growing research area.

The corpus size warrants additional consideration regarding the stability of the bibliometric outputs. With 80 documents, the keyword co-occurrence network is more sensitive to individual publications than analyses based on larger corpora. The addition or removal of a small number of documents could alter cluster compositions and quadrant placements in the thematic map. We mitigated this sensitivity by setting a low minimum occurrence threshold (two), but the cluster boundaries should be interpreted as indicative rather than definitive. The exclusion of non-English publications is particularly consequential given that China's Douyin platform hosts a substantial body of language learning content published in Chinese. Including this literature could introduce additional thematic clusters related to Chinese-medium instruction or platform-specific design features unique to Douyin's algorithmic architecture, thereby altering the geographic and thematic patterns reported here.

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Supervision, Project Administration, Funding Acquisition. Both authors contributed equally to this work.

Declaration of AI-assisted technologies in the writing process: QuillBot was used exclusively for paraphrasing and grammar checking during the manuscript preparation process. All intellectual contributions, including research design, data analysis, interpretation of findings, and argumentation, are the sole responsibility of the authors. Both authors reviewed and verified all text processed through QuillBot to ensure accuracy and fidelity to the intended meaning.

Data availability: The Scopus bibliographic dataset, TCCM coding sheet, VOSviewer thesaurus file, and analysis parameters supporting this study are deposited in Zenodo at [10.5281/zenodo.21606929](https://doi.org/10.5281/zenodo.21606929). The complete list of included and excluded documents with exclusion reasons is provided in Supplementary Material.

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