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REVIEW

The Evolution and Application of Thematic Analysis in Language Services Research: Methodological Challenges, Reflections, and Future Directions

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ABSTRACT

This article provides a critical examination of the evolution, application, and methodological implications of thematic analysis (TA) within language services research. Drawing on the principles of reflexive thematic analysis (RTA) as both an organizing and interpretive framework, the study reviews and synthesizes existing literature across six key domains: national language planning, urban governance, emergency language services, language economics, talent development and technological integration, and meta-level methodological mapping. Through this synthesis, the study identifies several recurring methodological challenges, including ambiguous epistemological positioning, limited interpretive depth, insufficient reflexivity, and low analytical transparency. Across these domains, TA demonstrates significant potential to illuminate both micro-level professional practices and macro-level structural dynamics. It enables researchers to uncover gaps in policy implementation, inequalities in resource allocation, and emerging tensions related to technological integration in language services. At the same time, the analysis reveals the need for greater methodological clarity and reflexive engagement in order to strengthen analytical validity. In response to these challenges, the article offers reflective insights and practical recommendations aimed at enhancing methodological rigor and conceptual innovation. The study concludes by outlining future directions for the field, including the integration of TA with emerging artificial intelligence tools, the

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refinement of analytic frameworks, and the advancement of theoretical, methodological, and ethical robustness in language services research.

Keywords: Challenges; Future Directions; Language Services Studies; Practice; Thematic Analysis

1. Introduction

As an emerging interdisciplinary field, language services span multiple analytical levels that together capture the complexity of communication in an increasingly globalized and technologized world [1]. **Table 1** presents the four major analytical levels in language services research, illustrating how studies can move from situated practices and experiences to institutional arrangements, broader policy environments, and methodological/epistemological reflection. Specifically, at the micro level, research typically focuses on translation, interpreting, and localization practices [2, 3]. At the meso level, scholarship expands the analytical lens to examine institutional and urban governance structures [4]. At the macro level, language services research connects to national and international language policy and planning, language rights, and the political economy of multilingual communication [3]. At the meta level, scholarship further advances methodological innovation and research mapping across the field [4]. The distinction between micro-, meso-, macro-, and meta-levels is proposed as an analytically oriented heuristic rather than a fixed taxonomy. These levels were developed through iterative engagement with the literature to capture recurring patterns in how language services research addresses individual practices, institutional arrangements, broader societal contexts, and methodological reflection.

Table 1. Analytical Levels in Language Services Research.

Analytical Level	Primary Focus	Typical Actors	Research Objects	Illustrative Topics
Micro	Situated practices and experiences	Translators, interpreters, service users	Interactional practices, professional decision-making	Translation strategies, user experience, and interpreter cognition
Meso	Institutional and organizational structures	Schools, hospitals, enterprises, and local governments	Service systems, organizational arrangements	Urban language services, emergency response systems
Macro	Societal and policy environments	National governments, international bodies	Language policy, ideology, political economy	National language planning, language rights
Meta	Knowledge production and methodology	Researchers and academic communities	Research paradigms, methods, and epistemology	Methodological reviews, thematic mapping

Across these levels, the research objects remain inherently dynamic and context-dependent. They are shaped by complex interactions involving a wide range of agents, including individual translators, enterprises, governmental agencies, technological developers, and end users with diverse linguistic profiles and communicative needs [3]. These multistakeholder interactions unfold within broader sociocultural environments characterized by rapid mobility, digitalization, and shifting governance regimes. As technological infrastructures, such as machine translation, AI-assisted tools, and multilingual communication platforms, continue to evolve, the roles and relationships within the language services ecosystem are continually reconfigured [4]. Given this complexity, quantitative approaches alone cannot fully capture the depth, contextual embeddedness, interpretive variability, and internal logics that characterize language services phenomena. A methodological framework capable of grappling with meaning, experience, and situated practice, therefore, becomes indispensable. However, previous reviews in language services research have primarily focused on single levels (micro, meso, or macro) or have applied thematic analysis inconsistently [5, 6], often lacking methodolog-

ical transparency and reflexive engagement[7–9]. This has limited the integration of insights across levels and the development of a coherent conceptual framework. Consequently, there is a need for a comprehensive, methodologically rigorous review that synthesizes findings across multiple domains and highlights both practical and theoretical implications.

In response to these analytical demands, qualitative methodologies, particularly thematic analysis (TA), are becoming central to contemporary language services studies because of their strengths in exploring meaning, interpreting lived experiences, and generating conceptual understanding[7, 10]. Rather than a single prescriptive method, TA is best understood as a family of methodological approaches that vary in epistemological orientation and analytic procedure[7, 8]. Its methodological spectrum ranges from more positivist-leaning coding reliability approaches, which emphasize systematic coding and interrater consistency, to constructivist-oriented reflexive thematic analysis (RTA), which foregrounds researcher subjectivity, interpretive depth, and theoretical engagement[8]. This diversity allows researchers to select analytic strategies that align with their paradigmatic commitments and research aims, and demonstrates RTA's applicability across fields such as health sciences education[11]. Moreover, TA's flexibility underscores its value as a general-purpose qualitative method capable of addressing multilayered, heterogeneous research goals, which are characteristic of language services as a hybrid field straddling linguistics, technology, education, public administration, and sociopolitical studies. Its analytic logic is widely transferable across contexts, making TA an effective tool not only for empirical description but also for conceptual innovation and theory building[12].

Within language services contexts, themes generated through TA or RTA often capture shared professional challenges, recurring user needs, systemic barriers in policy implementation, and technological drivers of industry transformation. Through systematic and iterative coding of interviews, focus groups, open-ended questionnaires, observational records, and policy documents, researchers can move beyond surface-level descriptions to construct interpretive narratives that reveal deeper mechanisms. For example, research has identified not only visible, surface-level issues such as insufficient language proficiency and limited digital competence among practitioners or users, but also a more deeply rooted societal theme: weak public awareness of language services and their value, which exposes underlying structural tensions, including the marginalization of language work, uneven resource allocation, and fragmented policy support[13]. Such findings illustrate the capacity of TA to illuminate both micro-level challenges and macro-level structural forces, thereby contributing to a more holistic and theoretically informed understanding of the field.

2. Thematic Analysis: Underpinning Principles and Methodological Rigor

A rigorous application of Thematic Analysis (TA) in language services research requires a precise grasp of the method's lineage, core principles, and procedural commitments, including explicit variant selection and clear epistemic positioning, since such methodological clarity forms the foundation for analytic depth and trustworthy findings. Ensuring analytic rigor and trustworthiness in TA requires deliberately enacted quality-assurance mechanisms, particularly reflexivity, transparency, and the maintenance of comprehensive audit trails. Recent methodological discussions have highlighted that procedural opacity, superficial thematization, and insufficient reflexive engagement remain common pitfalls that can undermine analytic credibility[14, 15]. Since its inception, TA has evolved through successive conceptual and procedural refinements; to use TA with rigor, researchers should therefore explicitly justify how historical and theoretical developments inform their analytic choices, rather than assuming readers will infer those links. In the stage of data generation, for example, high-quality qualitative interviewing is a prerequisite: a set of twelve methodological recommendations has been proposed to guide researchers from design through implementation, with particular emphasis on interviewer reflexivity and sensitivity to context[16]. Adhering to these recommendations matters because concrete practices such as question design, rapport building, and management of interviewer influence materially affect the quality, credibility, and interpretability of the collected data. Stating these premises up front clarifies how data quality anchors all subsequent analytic decisions elaborated below.

The formalization of TA into a replicable, six-phase framework established its status as an independent analytic method and provided qualitative researchers with a traceable

analytic logic. The six commonly used phases, familiarization, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report, are best understood as a recursive cycle rather than a linear sequence [17–19]. Consequently, method sections should describe not only which phases were implemented but also the iterations undertaken, the number of review cycles, the specific decisions that were revised, and the analytic insights that emerged from those revisions [18]. Making the iterative process explicit strengthens transparency and enables readers to follow how initial codes were transformed into robust themes and then interpretive claims [19].

Braun and Clarke's subsequent emphasis on reflexive practice reframed TA from a procedural technique to an epistemologically informed mode of meaning-making: themes do not simply 'emerge' from data but are actively generated through researchers' reflexive engagement [20]. This reframing requires researchers to account for their positionality, values, and interpretive acts as legitimate analytic resources rather than as mere sources of bias. Accordingly, method reporting should explicitly name TA (and its variant, where relevant), justify its selection, and situate it within a clear theoretical orientation: steps that avoid misclassification and increase interpretive transparency [8, 21]. Articulating this epistemological stance helps readers assess whether analytic moves are consistent with the researchers' declared commitments.

Maintaining methodological coherence also necessitates distinguishing among internal strands of TA, since different approaches are underpinned by divergent philosophical assumptions and analytic aims. Three principal approaches, coding reliability, codebook, and reflexive, are delineated in the literature, each entailing distinct researcher roles, analytic procedures, and reporting requirements [8]. The coding reliability approach, rooted in post-positivist sensibilities, emphasizes objectivity and reproducibility and commonly employs pre-established codebooks and inter-coder reliability metrics; researchers adopting this stance should therefore report empirical indices of reliability [22].

By contrast, the codebook approach mediates between realism and constructivism through structured but adaptable coding templates suited to team projects or larger samples [23]. RTA, grounded in constructivism and contextualism, treats researcher subjectivity, positionality, and value commitments as analytic resources that contribute to theoretical generation [21]. The chosen TA strand should therefore be aligned with the study's epistemological stance and research questions, and analytic levels and decision rules should be reported with sufficient detail to permit assessment of coherence and trustworthiness [24].

The reflexive approach is particularly valuable in language services studies because it illuminates complex mechanisms, such as meaning construction, power relations, and sociocultural context, that quantitative approaches cannot easily capture [9, 25]. Empirical applications demonstrate how the reflexive approach can move inquiry from descriptive surface-level accounts to interpretive, theory-informing conclusions, as illustrated by a study that employed RTA to trace cognitive tensions between spatial producers and users within the linguistic landscape of Shanghai's foreign-related medical institutions; the study explicitly documented how successive analytic decisions transformed raw observations into theoretical insight, thereby illustrating the explanatory potential of RTA [25].

Figure 1 positions the three major approaches of thematic analysis in a two-dimensional space defined by epistemological orientation (realist to constructivist) and researcher role (detached to reflexive). Points are annotated to summarize their typical coding strategies and quality indicators: Coding Reliability TA emphasizes predefined codebooks and inter-coder reliability; Codebook TA uses a structured but adaptable codebook; Reflexive TA (RTA) employs iterative, flexible, theory-informed coding with reflexivity and interpretive depth as key quality criteria.

Ensuring analytic rigor and trustworthiness in TA requires deliberately enacted quality-assurance mechanisms, particularly reflexivity, transparency, and the maintenance of comprehensive audit trails. Trustworthiness in TA has been operationalized through the criteria of credibility, transferability, dependability, and confirmability [22]. A complementary '4Rs' framework, consisting of rigor, relevance, resonance, and reflexivity, further underscores the centrality of reflexivity in achieving analytic depth and transparency [7]. International qualitative reporting standards, including Consolidated Criteria for Reporting Qualitative Research (COREQ) and the Standards for Reporting Qualitative Research (SRQR), guide transparent reporting and reinforce methodological rigor, serving as complementary benchmarks

for high-quality TA studies[26]. In practice, explicit reporting of how each criterion is met is necessary. This includes specification of analytic scope, clarification of semantic and latent levels of analysis, and delineation of inductive and theoretically driven orientations, for example[17, 27]. Such articulation enables readers to judge methodological fit and interpretive validity. Maintaining detailed audit trails that contain raw transcripts, initial reflective notes, codebooks, thematic maps, and reflexive journals allows independent evaluation of analytic decisions[22]. A stepwise account of thematic-map evolution offers a concrete model for this form of documentation and demonstrates the interpretive value that emerges when analytic transformations are presented with transparency[19].

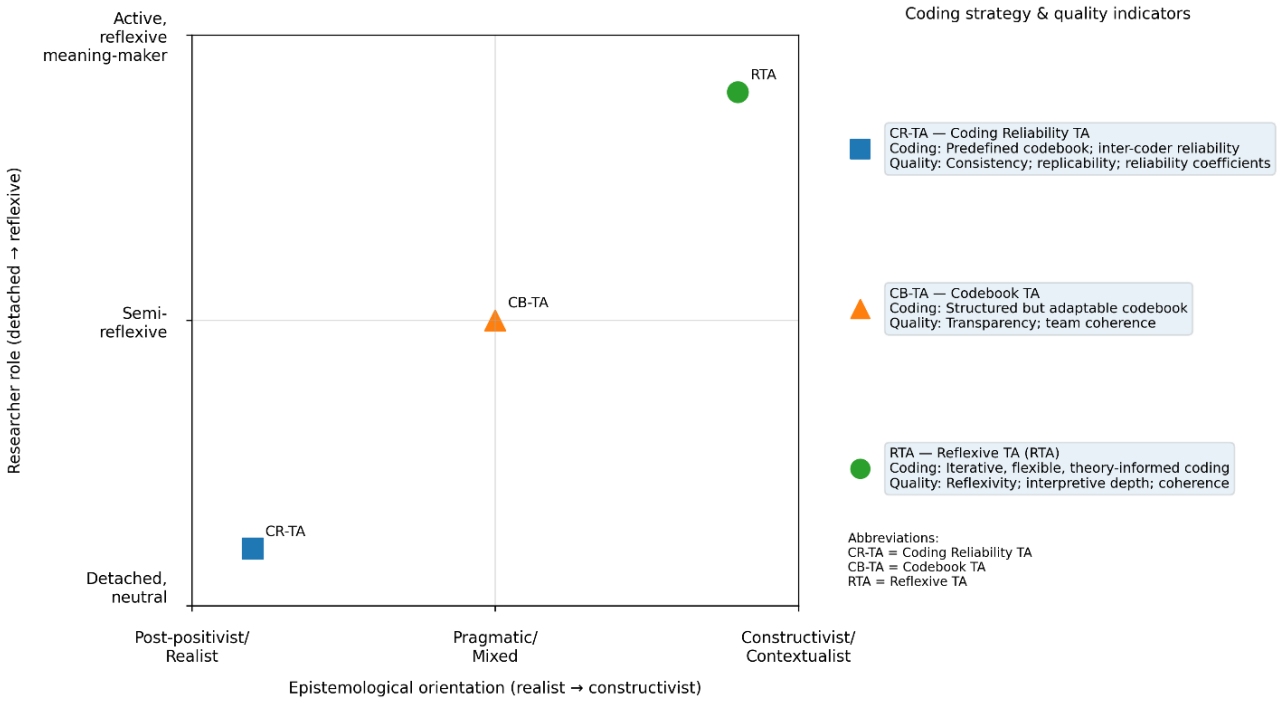


Figure 1. Variants of Thematic Analysis and Epistemological Positioning.

Rigorous application of TA in language services studies depends on explicit methodological positioning, transparent documentation of iterative analytic work, and reflexive engagement with data, codes, themes, and claims. When researchers make their epistemological choices and procedural steps visible, TA can function not merely as a data-reduction technique but as a robust engine for conceptual development and critical interpretation within the interdisciplinary field of language services.

3. Review Design and Analytical Approach

Building on the methodological principles outlined above, this review applies these concepts to evaluate and synthesize the selected literature, emphasizing methodological transparency, reflexivity, analytic coherence, and epistemological clarity. Epistemologically, this study adopts an explicitly interpretive and reflexive orientation, aligning with the assumptions underlying reflexive thematic analysis (RTA). We privilege the epistemological and analytic sensibilities associated with RTA, rather than RTA as a procedural method, as it enables the active generation of themes through reflexive engagement, situates the researcher's interpretive role as an analytic resource, and aligns with the constructivist and contextualist assumptions underpinning our critique of existing work. This privileging is therefore both epistemological and theoretical, reflecting our commitment to interpretive depth, methodological transparency, and the conceptual development of the field, rather than a purely pragmatic preference.

This study adopts a methodological and conceptual re-

view design rather than a systematic or scoping review. The primary aim is not to exhaustively catalogue all publications on language services, but to critically examine how thematic analysis (TA), particularly reflexive thematic analysis (RTA), has evolved, been applied, and been methodologically negotiated within language services research. Accordingly, the review emphasizes analytical coherence, theoretical representativeness, and methodological insight, rather than completeness or statistical aggregation. Consistent with this review orientation, no minimum quantitative threshold (e.g., a predefined number or percentage of publications) was imposed. Instead, the scope of the literature was determined by theoretical saturation at the conceptual and methodological level, that is, the point at which additional studies no longer contributed substantively new insights into the patterns of TA application or methodological challenges under examination.

The literature discussed in this review was identified through iterative engagement with core journals, edited volumes, and influential studies in language services research, applied linguistics, translation studies, and related interdisciplinary fields. The temporal scope of the literature spans approximately from 2010 to early 2025, a period that captures both the consolidation of language services as a recognized research field and the growing diversification of methodological approaches, including the increasing visibility of thematic analysis and reflexive qualitative methodologies. Earlier foundational works were included selectively where they provide essential theoretical or methodological grounding for TA or language services research. Selection was guided by three principles: (i) relevance to language services studies and the use of thematic analysis. (ii) representativeness of key application domains (e.g., national language planning, urban governance, emergency language services, language economics, talent development and technology, and methodological mapping), and (iii) theoretical or methodological influence, particularly studies that explicitly reflect on analytic procedures, epistemological positioning, or research design. In total, the review draws on a purposive corpus of approximately 40–50 highly influential and theoretically representative publications, rather than aiming for exhaustive coverage. Each study was evaluated according to methodological transparency, reflexivity, analytic coherence, and epistemological clarity, consistent with the principles of reflexive thematic analysis. Rather than applying predefined inclusion or exclusion criteria, the review follows a theoretically informed, purposive logic, which is consistent with conceptual and methodological reviews aimed at mapping intellectual trajectories and identifying recurring methodological challenges.

Thematic analysis is employed in this study as an organizing and interpretive framework, not as a formal data-analysis procedure applied to a delimited dataset. Drawing on the conceptual logic of TA, the analysis involved iterative reading, comparison, and reflexive engagement with the selected literature to identify recurring patterns in how TA has been used, adapted, and reported in language services studies. Through this process, six major application domains were constructed, along with cross-cutting methodological challenges and future-oriented trajectories. These themes do not emerge mechanically from the literature; rather, they are analytically generated through our reflexive interpretation of patterns, tensions, and absences across studies, informed by existing methodological scholarship on TA.

4. Applications of Thematic Analysis within Language Services Studies

Thematic Analysis (TA) is increasingly becoming an indispensable methodological approach in language services studies because its flexibility allows researchers to analyze diverse phenomena across educational, technological, social, and spatial domains, for example. Its capacity to identify meaning structures within varied datasets makes it particularly well-suited to a field characterized by cross-contextual complexity. Building on the methodological foundations outlined earlier, this section maps TA's applications across six core domains, which are illustrated in **Table 2**.

In the first domain of national language planning and strategy, TA demonstrates a powerful capacity for structural integration in complex policy environments. It is used to systematically code and synthesize macro-level policy documents and official discourse, revealing the foundational pillars of grand strategies. For instance, research has identified six core domains, including status and education, as the architecture of language strategies for major initiatives [28]. Beyond mapping, TA acts as a critical diagnostic tool. It uncovers tensions and misalignments, such as ecological imbalances in language use and gaps between national strategic goals

and local linguistic realities [29]. The resulting themes, like insufficient resource allocation and cross-lingual communication barriers [30, 31], provide an evidence base for improving governance and international communication mechanisms.

Table 2. Six Application Domains of Thematic Analysis in Language Services Research.

Domain	Core Research Focus	Typical Data Sources	Key Analytic Contributions of TA
National Language Planning & Strategy	National language policy, strategic planning, and international communication	Policy documents, planning reports, official discourse	Reveals misalignments between strategic goals and local linguistic realities; identifies structural gaps in language governance
Urban Language Services & City Governance	Public language services, internationalization, urban multilingual environments	Surveys, interviews, and municipal policies	Identifies service gaps, governance mismatches, and uneven resource allocation across sectors
Emergency Language Services & Governance Capacity	Crisis communication, multilingual emergency response, and vulnerable populations	Media reports, policy texts, institutional documents	Uncovers systemic vulnerabilities and coordination failures in emergency language governance
Language Economics & Value Evaluation	Economic value of language services, industrial mechanisms	Industry reports, corporate cases, policy narratives	Identifies explicit and implicit value chains and mechanisms of language commodification
Talent Development & Technological Integration	Training systems, translation technology, smart language services	Curriculum documents, instructional practices, and technology reports	Reveals competency gaps and misalignment between education, technology, and industry needs
Research Mapping & Methodological Development	Knowledge structures, research trends, methodological reflection	Literature corpora, bibliometric data	Maps intellectual trajectories and exposes methodological gaps and future directions

In the second domain of urban language services and city governance, TA provides a systematic pathway for auditing urban multilingual ecosystems. It processes data from surveys, interviews, and municipal policies to codify urban foreign-language capacity into measurable dimensions like resources and services [32]. This transforms subjective perceptions into analyzable thematic data. The analysis consistently identifies systemic mismatches, generating themes that highlight weak public language environments, uneven service distribution across sectors, and a misalignment between a city's linguistic resources and its international positioning [33–35]. Furthermore, TA supports forward-looking governance by helping to characterize the shift toward smart language services. It identifies key features like language datafication and human-machine coupling, alongside challenges such as data silos and institutional lag [36], thereby informing the development of data-driven urban language policies.

Regarding the third domain of emergency language services and governance capacity, TA enables a detailed examination of systemic vulnerabilities during crises. It synthesizes heterogeneous data from media reports, policy texts, and institutional documents to model the core components of emergency language governance, such as actors and processes [37]. This analytical process crystallizes critical shortcomings into coherent themes, including insufficient cross-lingual information dissemination, a lack of unified standards for volunteer management, and breakdowns in coordination among responding agencies [38]. By coding real-world incident reports and government announcements, TA proactively identifies risk points along the emergency governance chain. It generates themes related to crises of information accessibility for non-dominant language speakers, acute shortages in multilingual resource allocation, and the heightened risks faced by vulnerable populations [38]. These insights are crucial for building scalable response models and enhancing societal resilience.

In the fourth domain of language economics and value evaluation, TA facilitates the systematic analysis of often intangible value structures. It helps distinguish between the explicit economic value of professional language services and the implicit, social value generated by sector-specific or community language support [39]. Applying TA to industry

reports and corporate case studies allows researchers to move beyond macro description. It generates themes that elucidate the mechanisms of value creation, such as the chains of benefits in language services and the efficiency of language-resource allocation[39]. TA proves particularly valuable in examining complex economic interactions. A case study on mergers and acquisitions, for example, used TA to theorize how language variables influence corporate outcomes. Key themes included the costs of language barriers, the role of cross-lingual integration capabilities, and multilingual market entry barriers[40]. These insights directly inform corporate strategy and risk management.

Concerning the fifth domain of talent development and technological integration, TA reveals structural disconnects between education, technology, and industry. By coding academic literature and curriculum documents, TA constructs thematic frameworks that map the field. One analysis of translation technology instruction identified key themes encompassing teaching practices, tool use, and links to industry needs[41]. This process starkly reveals competency gaps and misalignments between curricular goals and professional expectations. Furthermore, TA plays a key role in analyzing the integration of technology into language services. Research on smart city applications uses TA to characterize emerging models, identifying features like pervasive computer-mediated communication and human-machine coupling. Simultaneously, it surfaces critical challenges, including data governance issues, gaps in relevant literacy, and ethical risks related to equity in technologically mediated services[36]. These themes provide a conceptual foundation for redesigning training systems.

Finally, in the sixth domain of research mapping and methodological development, TA functions as a meta-analytic tool for reflexively examining the field itself. It synthesizes large literature corpora and bibliometric data to map intellectual trajectories and knowledge structures. Through TA, scholars can identify dominant research hotspots, trace evolving trends, and expose imbalances within methodological systems[5, 6]. This macro-level mapping is complemented by TA's capacity for critical methodological introspection. The analytic process extracts themes that diagnose weaknesses in the field's own foundations, such as weak empirical bases, limited data-driven research, and insufficient integration of technological and linguistic inquiry[5, 6]. Comparable applications of TA in cognate fields, like translation studies, further validate its utility for examining professional experiences and ethical reasoning[17, 42]. Thus, TA not only assesses the status quo but also catalyzes methodological innovation.

The application of TA in diverse research topics within the field of language services studies demonstrates that TA provides a cohesive methodological foundation for language services research across educational, technological, social, spatial, and regional domains. By enabling both micro-level experiential analysis and macro-level theoretical construction, TA offers a versatile and rigorous framework for understanding the evolving landscape of language services studies and generating evidence-based and contextually grounded solutions.

5. Thematic Analysis within Language Services Studies: Challenges and Reflections

Thematic Analysis (TA) continues to encounter persistent challenges related to methodological clarity and coherence, although it has generated valuable insights within language services studies. Misunderstandings regarding procedural expectations, inconsistent implementation practices, and unexamined hybridization frequently undermine the credibility of findings and slow the development of TA as a standardized research method in the field. The discussion in this section identifies four key challenges and offers reflections on how these obstacles can be addressed to strengthen analytic rigor and interpretive depth.

The first major challenge lies in vague methodological description and ungrounded methodological hybridization, both of which compromise analytic coherence. Some studies claiming to employ TA fail to specify which particular approach, coding reliability, codebook, or reflexive procedures were adopted, or which epistemological stance underpins the analysis[9, 17, 22, 43]. These omissions produce inconsistencies between stated and enacted methodologies, resulting in epistemological inconsistency or paradigmatic misalignment, whereby a constructivist or reflexive orientation is asserted while analytic procedures associated with post-positivist traditions, such as inter-coder reliability metrics, are simultaneously employed. Compounding this problem is the uncritical

borrowing of concepts from other qualitative traditions, such as grounded theory's theoretical saturation or phenomenology's superordinate themes, without clarification of their alignment with TA's philosophical foundations.

Addressing the first challenge requires careful reflection on methodological alignment and deliberate articulation of analytic choices. One effective approach is to explicitly state the chosen TA strand (Coding Reliability Thematic Analysis/Codebook Thematic Analysis/Reflexive Thematic Analysis) and epistemological stance at the outset, clarify which procedures are drawn from which strand, and provide a rationale for any integration across approaches [23]. This reflection underscores that methodological hybridization can be productive only when grounded in philosophical clarity and analytic consistency, allowing TA to balance structural rigor with interpretive flexibility.

A second challenge involves the tendency for TA studies to remain at the level of topic summarization rather than constructing interpretive narratives, which constrains the analytic potential of the method. Many studies reduce themes to restatements of interview questions or aggregated responses, producing descriptive categorizations rather than meaningful analytic insights [8, 44]. This 'interview-question-as-theme' practice transforms analysis into mere sorting rather than sense-making, preventing the emergence of coherent explanatory stories. The absence of central organizing concepts limits the capacity to integrate dispersed data excerpts into analytically rich themes and reduces the ability to capture nuanced patterns, such as how educators reason in the absence of formal theoretical knowledge.

To overcome the second challenge, reflections emphasize the necessity of moving beyond superficial summarization to construct interpretive narratives. Themes should be defined as central organizing concepts that integrate dispersed data excerpts into coherent stories, with clearly specified scope conditions and disconfirming evidence. Expanding short code labels into full analytic statements, such as transforming side effects into long-term care workers' concerns about COVID-19 vaccine effects, exemplifies how detailed coding and thematic articulation enhance analytic depth and ensure meaningful insight [21, 27]. Such strategies enable TA to bridge raw data and theoretically informed interpretations, promoting explanatory power and analytic sophistication.

The third challenge arises from insufficient reflexivity, which constrains both interpretive richness and transparency in TA studies. Reflexivity involves examining how positionality, prior experiences, emotions, and embodied responses shape the analytic process, yet many studies neglect systematic documentation of these influences. This deficit limits the capacity to account for how the analyst's interpretive presence interacts with participant accounts, reducing both analytic depth and methodological credibility. While reflexive practices are increasingly recognized as essential, their implementation remains uneven, and attention to bodily, emotional, and intuitive responses is frequently overlooked [45].

Addressing the third challenge involves systematic implementation of reflexive practices. Reflections suggest incorporating concise positionality statements, scheduling reflexive checkpoints across the six TA phases, and maintaining reflective journals and analytic memos that document decision rationales and shifts in interpretation [45]. Attending to emotional, bodily, and intuitive responses provides additional analytic resources and recasts TA as a co-constructed process in which meaning emerges from the interplay between participants' accounts and the analyst's interpretive influence. This approach enhances both transparency and interpretive richness.

A fourth and closely related challenge concerns insufficient process transparency, which undermines the verifiability and trustworthiness of TA research. High-quality TA requires a clear and traceable account of how raw data evolve into final themes. Many studies, however, rely on vague statements such as repeatedly reading and coding data to identify themes, without specifying coding procedures, theme-building strategies, or review processes. The absence of detailed documentation hinders independent assessment of analytic decisions, limits reproducibility, and reduces confidence in the robustness of findings [19, 21].

Finally, responding to the fourth challenge requires explicit attention to process transparency. Exemplary practices include documenting the progression from initial data points to codes, first-order themes, and ultimately core themes, supported by visual thematic maps and detailed rationales for each refinement [19]. The inclusion of thematic evolution tables or appendices enables independent tracing of analytic decisions [21]. Reflections on these practices highlight that methodological transparency is central to reproducibility, persuasiveness, and scholarly integrity, ensuring that TA

findings are credible and analytically coherent.

It should be acknowledged that the empirical illustrations and application domains discussed in this review are predominantly drawn from Chinese language service contexts, including national strategic initiatives and urban governance practices. This contextual focus reflects the current depth and concentration of scholarship in this area, but it may also introduce a degree of regional concentration that limits immediate generalization. Nevertheless, the six thematic domains identified in this study are conceptual rather than geographically bound. Methodological scholarship on thematic analysis has consistently emphasized that its analytic value lies in epistemological flexibility and contextual adaptability, rather than in context-specific procedural uniformity[8, 17, 20]. Moreover, empirical studies applying thematic analysis in adjacent applied fields, particularly health and medical research, have documented comparable methodological challenges related to reflexivity, analytic depth, and process transparency across different institutional and national contexts[9, 12, 21, 44, 46]. Recognizing this contextual concentration, therefore, does not point to a limitation of thematic analysis itself, but rather highlights the need for future comparative research that empirically examines how these methodological challenges and analytic practices unfold across different regional and sociopolitical settings.

6. Using Thematic Analysis in Future Language Services Studies

The integration of thematic analysis (TA) within language services studies is expected to become increasingly reciprocal as both the industry and research methodologies continue to evolve. As TA is applied to a broader range of empirical contexts, future research should aim to implement more explicit analytic procedures, clearly articulate epistemological positioning, and develop systematic interpretive practices. Anticipated trajectories in the field include advancing human-AI collaboration, refining methodological systems, strengthening theoretical engagement, and deepening ethical awareness. **Figure 2** visualizes these four trajectories and their shared role in positioning TA as a central tool in future language services research. Each trajectory addresses existing methodological challenges while guiding the evolution of TA as a central tool in future language services research.

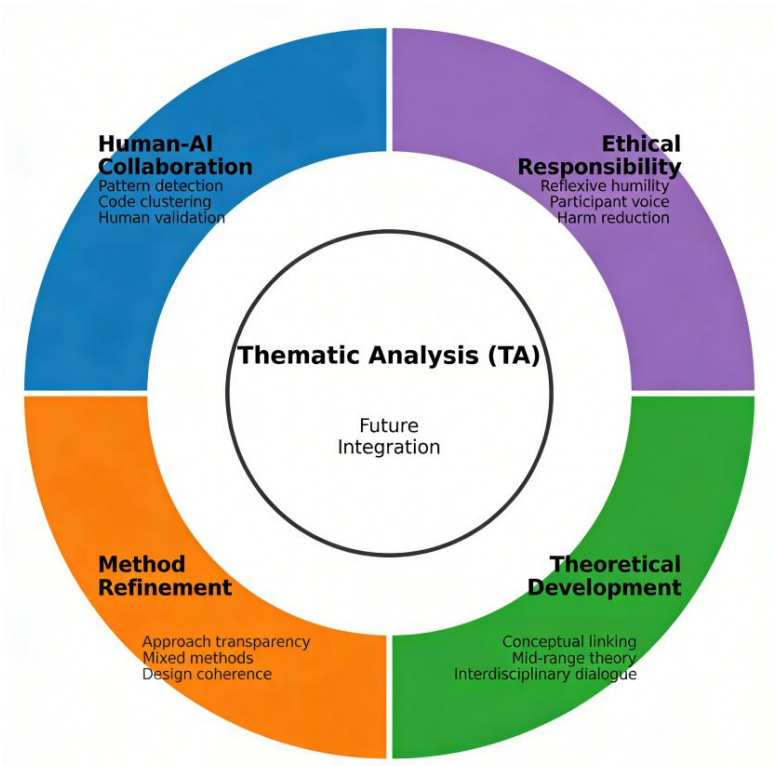


Figure 2. Four Trajectories for Integrating TA in Future Language Services Studies.

The first trajectory emphasizes human-AI collaboration, which is projected to transform analytical workflows while preserving the centrality of human interpretive labor. Future studies are likely to examine how large language models can assist with early-phase tasks such as pattern detection, clustering, and preliminary code generation across large-scale datasets, including user reviews, policy documents, and social media corpora. This collaboration has the potential to improve efficiency and expand data coverage, yet it simultaneously heightens the need for researchers to exercise interpretive authority, critically assess algorithmic outputs, and make theoretically grounded analytic decisions [47]. Prompt-engineering toolkits may facilitate intelligent analysis, for example, through structured prompt design that guides models to generate and summarize inductive codes while aligning with TA phases, but outputs must be validated against human coding and checked for bias and contextual loss [48]. Scholars must remain attentive to algorithmic opacity, potential systematic biases, inaccuracies, and ethical concerns in AI-assisted coding, as highlighted in recent empirical evaluations of generative AI in qualitative contexts [49]. Future human-AI partnerships will enhance TA only if researchers sustain epistemological vigilance and ensure that qualitative meaning-making remains firmly grounded in rigorous interpretive reasoning.

A second trajectory focuses on methodological refinement and the increasing adoption of mixed methods, leveraging technological augmentation while addressing persistent issues related to strand selection and design coherence. Current practice often reflects the invocation of TA without explicit specification of the adopted approach. Future scholarship is expected to align research questions with analytic orientations, using codebook approaches for structured, large-scale feedback and a reflexive TA approach for inquiries into identity, power, and latent meaning. Braun and Clarke's 20-question checklist offers one pathway toward enhanced methodological coherence [8]. Additionally, integrating TA with quantitative methods can allow future studies to navigate fluidly between macro-level tendencies and micro-level interpretive explanations. Numerical data may reveal broad trends, which can then be interpreted through TA, or TA may generate conceptual categories later operationalized for survey-based validation.

The third trajectory highlights the growing importance of theoretical development and interdisciplinary dialogue. Language services studies intersect with fields such as translation studies, sociology, anthropology, communication studies, and public administration, positioning TA as a generative platform for conceptual innovation. Future research should move beyond assembling descriptive themes toward constructing mid-range theories that clarify conceptual relationships and advance cumulative knowledge. This entails articulating interconnections among themes, explaining theoretical implications, and situating findings within broader disciplinary conversations. Exemplary studies, including applications of spatial production theory to analyze spatial justice and the development of a three-dimensional typology of language services effectiveness, demonstrate how TA can provide a foundation for theoretical articulation. Similarly, concepts such as the interview inferential window and theoretical sensitivity offer practical tools for strengthening conceptual rigor [50, 51]. Collectively, these approaches encourage a shift from descriptive categorization to systematic theorization, positioning TA to play a more substantive role in shaping the intellectual trajectory of language services research.

The fourth trajectory foregrounds ethical responsibility and representational justice, particularly as future language services studies increasingly involve socially vulnerable populations and sensitive contexts, including refugee communities, crises, and privacy-dependent localization practices. Future scholarship should emphasize not only general ethical principles but also the interpretive decisions that shape the representation of participants' voices. A recent critique of hermeneutic dominance highlights the risk that researchers may unintentionally overwrite participants' perspectives, resulting in epistemic harm [45]. To address this risk, researchers are expected to cultivate reflexive humility, distinguish participant-derived meanings from researcher-generated interpretations, and report methodological limitations transparently. Practices such as qualitative pluralism, which analyzes data through multiple theoretical lenses, and collaborative questioning with co-researchers offer additional mechanisms for enhancing trustworthiness and ethical clarity. By adopting these strategies, TA can evolve into an analytic method that is not only methodologically robust but also ethically responsive to the complex realities of language services ecosystems.

7. Conclusions

Thematic analysis (TA) has emerged as one of the most dynamic and versatile qualitative methodologies within language services studies, playing a pivotal role in structuring and interpreting the field's increasingly complex empirical terrain. Through continuous theoretical and practical refinement, TA has developed varied orientations, including reflexive approaches, mixed-methods integration, and human-AI collaborative analysis. Its methodological flexibility, interpretive depth, and capacity for cross-context adaptation make TA particularly well suited to the interdisciplinary, socially embedded, and practice-oriented character of language services studies, allowing researchers to illuminate underlying mechanisms, relationships, and patterns that shape language services practices and policies.

This study synthesizes TA applications across diverse research concerns, including national strategic language planning, urban governance, emergency-response systems, the economic value of language services, talent development and technological integration, and methodological mapping, demonstrating how TA facilitates both micro-level insights and macro-level theorization. Persistent challenges, such as unclear methodological positioning, limited analytic depth, insufficient reflexive engagement, and inadequate transparency, underscore the importance of heightened methodological awareness and quality assurance.

TA contributes theoretically by revealing patterns and mechanisms that inform conceptual understanding, methodologically by exemplifying reflexive thematic analysis as a rigorous and transparent analytic process, and practically by providing evidence-based insights for policy, urban governance, emergency systems, talent development, and technological integration. Looking forward, TA is well positioned to support intelligent and AI-assisted language services, enabling large-scale pattern recognition, preliminary coding, and data interpretation, while maintaining human interpretive authority and epistemological rigor.

The future development of language services studies will depend on the continued refinement and critical application of TA, with researchers making principled methodological choices, clearly reporting analytic processes, and integrating theoretical rigor, methodological transparency, and ethical reflexivity. Complementing this, the '4R' criteria offer a useful framework for ensuring that scholarship balances analytical sophistication with responsiveness to real-world needs[7]. By integrating these dimensions, TA can continue to generate new knowledge, inform policy and practice, and contribute lasting insights toward a more inclusive, effective, and equitable global language services ecosystem.

Author Contributions

Conceptualization, X.T. and S.S.; literature review, writing—original draft preparation, and writing—review and editing, X.T., S.S., and L.X.; supervision and project administration, L.X.; funding acquisition, X.T. and L.X. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement

Not applicable.

Data Availability Statement

No empirical datasets were created or analyzed during the current study.

Conflicts of Interest

The authors declare no conflict of interest.

AI Use Statement

AI-assisted tools (including ChatGPT and Grammarly) were used solely for language polishing and grammar check-

ing to improve the clarity and readability of the revised manuscript. These tools were not used to generate any scientific content, research ideas, or conclusions. All conceptualization, analysis, and interpretation were conducted entirely by the authors, who take full responsibility for the accuracy, integrity, and originality of the manuscript.

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