A theoretical framework of collaborative authorial voice: Cognitive, social, and textual dimensions

Journal of Second Language Writing 71 (2026) 101278

Contents lists available at ScienceDirect

Journal of Second Language Writing

journal homepage: www.elsevier.com/locate/jslw

A theoretical framework of collaborative authorial voice: Cognitive, social, and textual dimensions

Baraa Khuder [a,*,1], Bojana Petric [b,2]

[a] Chalmers University of Technology, Department of Communication and Learning in Science, Gothenburg SE-412 96, Sweden
[b] Birkbeck, University of London, School of Creative Arts, Culture and Communication, Malet Street, London WC1E 7HX, United Kingdom

ARTICLE INFO

Keywords:
Authorial voice
Collaborative writing
Case study
Writer identity
Writing for publication

ABSTRACT

Authorial voice in academic writing reflects how writers construct and assert authority within their disciplinary communities. While voice has so far been examined through linguistic, sociocultural, metadiscourse and other perspectives, existing frameworks have largely focused on individual authorship, overlooking the complexities of collaborative writing. This study introduces a comprehensive multidimensional theoretical framework that integrates intrapersonal (cognitive, metacognitive, and emotional), interactional (negotiation and power dynamics), and behavioral (textual enactment) dimensions to trace how authorial voice is constructed in collaboration. Through a longitudinal case study, this paper examines how voice is shaped through distributed cognitive processes, feedback negotiations, and textual positioning. Findings reveal that authorial voice is not a fixed attribute but a cognitively developmental, socially situated, and rhetorically negotiated construct. Co-authors and gatekeepers play a central role in shaping voice, sometimes enabling agency, other times constraining it. By applying this theoretical framework to collaborative writing for publication, this study offers a novel lens for analyzing voice as a distributed and dialogic developmental phenomenon. The framework advances theorizing beyond individual-centered accounts and offers methodological guidance for studying voice across drafts, actors, and feedback channels in collaborative research contexts.

1. Introduction

Authorial voice is a key aspect of academic writing, reflecting the authority and identity that writers project in their writing processes and products. Despite its centrality in scholarly communication, authorial voice remains a contested and elusive concept, described as "confusing" (Bowden, 1995), "controversial" (Tardy, 2012), and "problematic" (Elbow, 1994). This ambiguity stems from the diversity of theoretical perspectives and methods used to study voice (Stock & Eik-Nes, 2016), including metadiscourse features (e.g., Hyland, 2008), Bakhtinian theory (Prior, 1998), and sociocultural theory (Ivanič, 1998; Tardy & Matsuda, 2009). Scholars have explored authorial voice through textual markers (e.g., Hyland, 2008), writer self-perceptions (e.g., Petrić, 2010), and feedback interactions (e.g., Prior, 1998), but primarily in individual writing.

* Correspondence to: Department of Communication and Learning in Science, Chalmers University of Technology, Hörsalsvägen 2, Göteborg SE-412 96, Sweden
E-mail addresses: khuder@chalmers.se (B. Khuder), b.petric@bbk.ac.uk (B. Petric).
[1] ORCID: 0000–0003-2272–2189
[2] ORCID: 0000–0001-6855–3785

https://doi.org/10.1016/j.jslw.2025.101278
Received 20 February 2025; Received in revised form 18 November 2025; Accepted 10 December 2025
Available online 12 December 2025

However, research on collaborative writing (e.g., Storch, 2013; Li & Storch, 2017) has shown that writing is often co-constructed through joint decision-making, negotiation of meaning, and distribution of cognitive and rhetorical labor (for thorough overviews see Li & Zhang, 2023; Storch, 2019; Zhang & Plonsky, 2020). Despite this growing acknowledgment of the interdependent nature of collaborative writing, studies of authorial voice have paid limited attention to how voice emerges and evolves in co-authored texts (Li & Zhang, 2023). Recent work has begun to address this gap, for example Zabihi and Bayan's (2020) comparison of authorial voice in independently and collaboratively written L2 texts. Similarly, Li and Zhang (2023) outline a research agenda for L2 collaborative writing, calling for studies that explore how co-authorship shapes voice construction and textual production. Yet, as they note, there is a lack of robust conceptual frameworks for analyzing authorial voice in collaborative settings, especially in L2 academic writing.

Another gap concerns the limited attention to voice development at the cognitive level. Studies such as Petrić (2010) and Prior (1998) have examined students' perceptions and the influence of feedback, nevertheless, they rarely trace how voice is cognitively constructed or revised across the writing process. In a critical intervention, Fogal (2019) used a microgenetic, complexity theory lens to show that authorial voice emerges through dynamic, learner-specific fluctuations in rhetorical choices. This study, focusing on L2 Japanese learners, demonstrated that authorial voice development involved not just discursive uptake but also cognitive coordination of lexical, structural, and disciplinary repertoires over time. Fogal (2019) argues for a broader recognition of intrapersonal and dialogic cognitive processes that mediate voice construction, especially during revision, uptake, and feedback integration.

Indeed, as Larsen-Freeman (2007) reminds us in her reflection on the cognitive–social debate in Second Language Acquisition, the social turn, while invaluable, should not eclipse the role of cognitive processes. She calls for a non-binary, integrative perspective, stating that cognitive activity and social interaction are not mutually exclusive but dynamically interdependent. This insight is echoed in Mhilli's (2023) review of voice studies, which highlights a paradigm shift from individual to dialogic conceptualizations of voice. However, Mhilli (2023) also identifies a persistent lack of empirical research on how voice is constructed across time, especially in L2 contexts involving collaborative writing teams.

This study addresses these gaps by proposing and applying a Collaborative Authorial Voice framework, adapted from Zimmerman's (1995) Psychological Empowerment (PE) framework, that integrates (i) intrapersonal processes (cognitive–metacognitive–affective engagement), (ii) interactional processes (negotiation, revoicing, power and socialization), and (iii) behavioral realizations (textual enactments). Conceptually, it extends individual/text-centric accounts by theorizing voice as distributed, negotiated, and developmentally scaffolded. Empirically, we demonstrate its utility through a longitudinal case of an L2 scholar's co-authored publishing trajectory.

2. The Psychological Empowerment (PE) framework

The PE framework, developed by Zimmerman (1995), offers a multidimensional perspective on how individuals understand, experience, and enact agency in structured environments. Originally emerging from community psychology, the Psychological Empowerment has since been widely applied in educational research to examine learner motivation, academic engagement, and perceptions of self as active agents in learning processes (You, 2016). The framework comprises three interrelated components: the intrapersonal dimension, which captures individuals' cognitive processes and their beliefs about their capacity and efficacy; the interactional dimension, which reflects how they interpret and navigate social systems; and the behavioral dimension, which includes the concrete actions they take to exert influence. By integrating internal belief, contextual awareness, and enacted behavior, PE provides a dynamic framework for understanding how individuals are empowered to develop and express agency over time and across learning contexts.

This framework is particularly useful for research on authorial voice, which involves a similarly complex interplay between internal and external influences and processes. The literature on voice has largely bifurcated into two approaches: macro-level accounts that examine sociocultural and institutional conditions shaping voice, and micro-level analyses of how voice emerges through moment-to-moment choices, internalization, and revision. However, little is known about the developmental processes that bridge these levels—what Fogal calls the microgenetic mechanisms by which writers internalize macro-level constraints and translate them into textual decisions. The PE framework addresses this gap by offering a scaffold across levels of analysis: it accounts for how individuals cognitively come to see themselves as capable contributors (intrapersonal), how they interpret and negotiate power-laden contexts (interactional), and how they perform and revise those interpretations through strategic action (behavioral).

This multidimensional perspective is particularly useful for studying collaborative writing, where voice is negotiated and co-constructed through both cognitive processes and social interactions, and ultimately realized in textual form. Studies of L2 collaborative writing (Storch, 2013; Li & Storch, 2017; Morton & Storch, 2019) show that co-authors jointly plan content, negotiate stance and authority, and enact collective decisions in the text creating an interplay of ideational, interpersonal, and textual dimensions of writing. The PE framework allows us to foreground this interplay while also emphasizing the developmental, agentive aspects of voice construction in collaborative settings. In the following sections, we review empirical research on students' and academics' writing that aligns with the three dimensions of PE and their relevance to authorial voice negotiation in collaborative writing.

2.1. The intrapersonal aspect of authorial voice: Cognitive and metacognitive dimensions

The intrapersonal aspect of authorial voice encompasses the cognitive and metacognitive processes writers engage in as they compose, revise, and reflect on their texts. While voice has often been discussed as a social or textual phenomenon, its emergence is equally shaped by how writers internally plan, monitor, and evaluate their rhetorical stance. This internal work—what Flower and Hayes (1981) defined as the recursive mental activity of planning, translating, and reviewing—forms the foundation of how writers

construct and control voice.

From a cognitive perspective, authorial voice is rooted in the writer's mental representation of the task and their perceived role within it. Writers must decide what stance to adopt, how to align with or challenge disciplinary expectations, and what linguistic strategies will convey authority. As Bereiter and Scardamalia (1987) argue, skilled writers shift from knowledge-telling to knowledge-transforming modes, actively generating new relationships among ideas to shape their argument. In second language writing, this transformation is especially demanding, as writers must simultaneously manage language encoding and rhetorical intention. Khuder and Harwood (2019)highlight how this tension manifests in L2 writers: while one participant, Lina, recursively planned and revised her rhetorical position, another, Reem, disengaged cognitively by rewording source materials without internalizing or transforming them. The difference in their cognitive investment (Norton, 1995) was reflected in the depth and authenticity of what Khuder and Harwood (2019) called "control of authorial voice".

Metacognition, meanwhile, enables writers to regulate their cognitive processes by reflecting on what they are doing, why they are doing it, and how well it aligns with their goals. As Negretti (2012) demonstrates, metacognitive awareness allows L2 writers to make deliberate choices about structure, tone, and stance, based on their understanding of audience and genre. In her longitudinal study, students who exhibited strong metacognitive genre knowledge (e.g., understanding how arguments are typically structured in their field) and control (e.g., monitoring their use of evaluative language) were more likely to produce writing with a discernible and contextually appropriate authorial voice. Similarly, Jou (2019) found that L2 students who were guided through SFL-based metacognitive scaffolding, such as being prompted to reflect on hedging and authorial presence, were better able to project a confident voice in argumentative writing.

What emerges from these studies is that voice is not simply a stylistic surface or a product of social positioning. It is also a result of internal decision-making of how writers conceptualize their authority in relation to the rhetorical situation, and how they regulate their textual presence in real time. Particularly in collaborative writing, these cognitive and metacognitive processes play a crucial role in determining whether and how a writer chooses to assert their authorial voice.

2.2. The interactional aspect of authorial voice

The interactional aspect of authorial voice refers to how writers negotiate their presence and authority in co-authored texts, particularly in relation to power, positioning, and feedback in academic communities (Khuder, 2025a). This dimension is critical in collaborative writing, where voice is not simply an individual attribute but a co-constructed and sometimes contested outcome. Negotiation of authorial stance, disagreements over rhetorical strategies, and differing conceptions of knowledge legitimacy often shape whether and how individual voices are heard and integrated into the final product.

Revoicing, or the act of one writer altering another's text, is a common yet fraught feature of collaborative writing. Prior's (1998) ethnographic case of Moira and West exemplifies this dynamic: the advisor's interventions led the L2 student to feel alienated from her own text, highlighting how revoicing may undermine the original writer's authorial identity. Similar patterns were noted by Tardy (2009), who found that authors often mask dissent or accommodate dominant discourses during co-author negotiations, especially in high-stakes publication contexts.

More recent research has turned to the conflictual dynamics of co-authoring, especially how power asymmetries influence voice assertion. Chen and Lee's (2022) case study in an EFL context provides compelling evidence that while cognitive conflict, or disagreement about ideas, can lead to better writing outcomes, socio-emotional and process conflicts tend to suppress critical engagement and inhibit voice expression. Their study shows that when power hierarchies are perceived as rigid or feedback is delivered in an emotionally charged tone, L2 writers may retreat, self-censor, or disengage from the collaborative process.

These findings resonate with broader scholarship on academic gatekeeping and symbolic domination. Canagarajah (2002) and Lillis and Curry (2010) demonstrate how scholars from peripheral contexts often have their voices reshaped to conform to Anglophone norms, a process that may involve silencing non-normative epistemologies or rhetorical moves. As a result, collaborative writing often becomes a site of negotiated compromise or epistemic erasure, where junior or marginalized authors defer to the preferences of more powerful co-authors (Zhang & Plonsky, 2020).

Furthermore, Gourlay (2009) and Khuder and Petrić (2022) emphasize the affective toll of such negotiations. Writers often experience a sense of academic illegitimacy when their contributions are overwritten, or when their cultural ways of knowing are disregarded. These interactional moments—often small and repeated—accumulate into broader patterns of exclusion that affect how voice is negotiated across drafts and projects.

Overall, these studies highlight that the interactional aspect of authorial voice is not merely about how feedback is given or received; it is also shaped by institutional prestige, linguistic hierarchies, disciplinary norms, and interpersonal dynamics. It should be noted here that interactional voice also encompasses processes of academic and disciplinary socialization, such as the guidance of one co-author by another in supervision, and the mutual development in, for example, interdisciplinary collaboration.

2.3. The behavioral aspect of authorial voice

The behavioral aspect of authorial voice refers to how writers enact their scholarly identity through textual features, including choices in lexis, stance, citation, and rhetorical structure. This dimension highlights the visible outcomes of the cognitive and social processes involved in voice construction and captures how authority, alignment, and epistemic stance are rendered in written academic discourse. In collaborative writing, behavioral voice is the observable residue of the often complex negotiation of ideas, tone, and legitimacy.

Scholars have approached this dimension both deductively (a priori) and inductively (a posteriori). The former involves analyzing predetermined features such as personal pronouns, hedges, boosters, and engagement markers. For example, Hyland (2008) developed an influential framework of interactional metadiscourse, categorizing stance and engagement features as key indicators of how writers claim authority and relate to readers. These markers, such as "I argue," "perhaps," or "clearly", are widely used in corpus-based studies to measure authorial presence across disciplines. Quantitative studies (e.g., Thompson, 2012) have showed that first-person pronouns and modality choices strongly influence perceptions of writer credibility, with disciplinary differences shaping the strength and frequency of such features.

In contrast, a posteriori approaches emphasize the context-dependent nature of voice by focusing on how expert readers perceive and interpret textual cues. Tardy and Matsuda (2009), for instance, argue that voice should be analyzed as an emergent quality shaped by interaction between writer, reader, and genre expectations. This approach is particularly valuable in collaborative contexts, where textual voice is co-produced and revised across drafts. Morton and Storch (2019) show that supervisors' interpretations of PhD student voice vary based on disciplinary expectations, evidencing the negotiated and contingent nature of authorial positioning.

Recent studies continue to explore how textual features reflect and construct authorial voice. Cheung and Lau (2020) analyzed metadiscourse in high-rated L2 essays and found that voice was signaled not only through stance markers but also through how writers organized arguments and framed citations. Similarly, Dressen-Hammouda (2014) tracked the longitudinal development of voice among geology undergraduates, observing that as students acquired genre familiarity and field-specific lexis, their writing increasingly reflected authoritative and community-aligned voices. This supports the notion that behavioral voice is not static but evolves through disciplinary enculturation.

Voice is also reflected in citational practices and scholarly alignment (Sun et al., 2022). Lillis and Curry (2010) argue that citations are not neutral acts of attribution but serve to position writers within ideological, disciplinary, and geopolitical hierarchies. Citing Anglophone versus regional sources, choosing foundational versus recent literature, and aligning with prominent figures in the field are all strategic textual choices that shape how a writer's voice is perceived. These choices become even more consequential in multilingual and peripheral academic contexts, where voice is evaluated against global norms.

Thus, the behavioral aspect of authorial voice captures how academic writers establish credibility, negotiate textual ownership, and align themselves with disciplinary and institutional expectations. These textual enactments reflect not only internal self-perception or social negotiation but also the writer's strategic decisions to project legitimacy and authority. By mapping these observable features onto Zimmerman's (1995) PE framework, we conceptualize voice not merely as identity expression but as enacted empowerment—manifested in rhetorical decisions that assert presence, agency, and alignment within collaborative academic discourse.

2.4. Overview of the collaborative authorial voice framework

Building on Zimmerman's (1995) PE framework, this study conceptualizes authorial voice in collaborative writing as a multidimensional construct. Table 1 presents an overview of this framework, outlining the three interconnected dimensions: intrapersonal, interactional, and behavioral, that shape how academics construct and control their voice in co-authored texts.

This framework offers a comprehensive lens for examining how voice is constructed, negotiated, and realized in collaborative academic writing, addressing the limitations of individual-centered frameworks (e.g., Ivanič, 1998). It underscores the interplay between internal cognitive and metacognitive processes, relational negotiation, and textual representation in shaping authorial presence. To bridge the conceptual and empirical components of this study, we apply the proposed framework to real-world collaborative writing. Specifically, we examine how an L2 Syrian academic in exile, collaborating with EL1 co-authors in L2 English, negotiates his authorial voice in co-authorship. Through this case, we explore the following research question:

RQ: How does an L2 academic develop, negotiate, and control his authorial voice in collaborative academic writing across intrapersonal, interactional, and behavioral dimensions?

3. Methods

3.1. Context and participant

This study is part of a larger three-year research project exploring the academic literacies development of L2 exiled Syrian academics, particularly in contexts of co-authorship with EL1 academics through the Council for At-Risk Academics (CARA) (Khuder, 2021). The CARA Syria Program facilitates research collaborations between exiled Syrian academics and UK-based scholars and, in some cases, provides English for Academic Purposes (EAP) support. All participants in the broader study, including Ahmad and his co-author, provided informed consent. Ethical approval was granted by Birkbeck, University of London. Pseudonyms are used throughout to preserve participant anonymity, and identifying information, including institutional affiliations and co-author identities, has been removed where appropriate.

This article presents an in-depth case study (Negretti & Khuder, 2024) of one participant, Ahmad, whose collaborative writing history offered the richest dataset within the broader project. Ahmad provided the most extensive, sustained, and triangulated set of data: Ahmad's case included six complete text histories (30 drafts in total, incorporating multiple rounds of co-author and reviewer feedback), ten interviews conducted over three years, and supplementary materials such as email exchanges and editorial correspondence. In addition, data from one of his long-term collaborators were collected, offering an emic perspective on their joint writing. This varied co-authorship landscape, along with the availability of longitudinal data, including drafts, email exchanges, and an interview with a long-term co-author, makes Ahmad's case especially suited to tracing the development of authorial voice across

Table 1
Overview of the collaborative authorial voice framework.

Dimension	Definition	Key components
Intra-personal	The cognitive and metacognitive processes through which writers internally construct and regulate their authorial presence.	• Self-efficacy & ownership • Goal setting & planning • Monitoring & revision strategies • Epistemic positioning.
Inter-actional	How writers negotiate position, power, and participation within collaborations and disciplinary communities.	• Feedback negotiation • Co-authoring roles • Audience & community norms • Networked positioning (supervisors, peers, reviewers) • Institutional/geopolitical constraints.
Behavioral	The textual realization of voice in academic discourse (a priori features + a posteriori reader judgments).	• Stance resources (hedges, boosters, attitude) • Engagement resources (reader address, questions) • Citation & attribution patterns • Argument (claim–warrant–evidence) • Disciplinary terminology.

intrapersonal, interactional, and behavioral dimensions.

Ahmad is a UK-based academic in the field of life science with five years of post-PhD experience. Before displacement, he had co-authored five publications in Arabic but had no experience publishing in English. During exile, Ahmad successfully co-authored six English-language academic articles, all in collaboration with UK-based scholars. His network comprises over ten co-authors, the majority of whom are senior academics and EL1 speakers based in the UK and an African country, in addition to collaborating with L2 Syrian academics in Syria. Among these collaborators, Julia was particularly significant: she co-authored more than six papers with Ahmad over a five-year period, and Ahmad identified her as the most crucial academic in his career. In his words, Julia not only supported his initial steps in English-medium publishing but also socialized him into international academia. Their sustained collaboration, marked by both asymmetries of experience and gradual shifts in agency, thus provided a valuable lens into how voice is co-constructed and renegotiated in the context of collaborative writing for publication.

3.2. Data collection

Data were collected over a 36-month period from Ahmad, and from one of his long-term co-authors, Julia. Data were collected from Julia to gain an emic perspective on how voice was negotiated and distributed in their joint writing practices. Including her reflections enabled a more comprehensive and triangulated understanding of Ahmad's authorial voice development in context, particularly how it was shaped and perceived within actual co-authorship interactions.

This study's single-case design enabled a deep, multi-layered exploration of authorial voice in L2 collaborative writing. The data collection strategy was informed by Zimmerman's (1995) Psychological Empowerment framework, allowing us to trace voice across cognitive, metacognitive, social, and textual dimensions. Methods included both text histories (TH) and talk-around-text interviews.

3.2.1. Text histories (TH)

Text Histories (TH) (Lillis & Curry, 2010), include all drafts of a manuscript along with associated artefacts such as co-author feedback (track changes, comments), emails, reviewer reports, and final published versions. For Ahmad, complete TH of 6 papers were collected, selected based on his preferences and the availability of draft materials. Each text history included between five and seven drafts, resulting in a total of 30 drafts analyzed. These were examined alongside co-author feedback, marginal comments, and email correspondence from Julia and other collaborators. These TH offered insights into both linguistic enactment (behavioral voice) and feedback-mediated negotiation (interactional voice). Draft progression further enabled the tracking of planning, rhetorical adaptation, and revision strategies, which are key indicators of cognitive and metacognitive involvement in voice construction (intrapersonal voice).

3.2.2. Talk-around-text interviews

To explore Ahmad's evolving perceptions of voice and co-authorship, we conducted a series of talk-around-text interviews (Ivanič, 1998). In these sessions, Ahmad was shown excerpts from his drafts, feedback comments, or publication versions and invited to reflect

Table 2
Coding scheme for authorial voice dimensions.

PE dimension	Subcategory	Description	Primary data source(s)	Example indicator
Intra-personal	Cognitive engagement	Evidence of planning, drafting, or reviewing decisions related to rhetorical content and structure	Interviews Drafts	"I wasn't sure how to say it, so I just left it out."
	Metacognitive strategy	Reflections on monitoring or adjusting writing decisions (tone, stance, clarity, etc.)	Interviews	"I changed this because I thought the tone was too strong for a reviewer."
	Self-efficacy	Expressions of confidence or doubt in one's ability to contribute authoritatively	Interviews	"I always waited for Julia to rewrite my parts."
	Investment	Indicators of time, effort, or emotional commitment to writing tasks	Interviews	"I stayed up until 3 am fixing this paragraph—I wanted to make it sound like me."
	Academic self-conception	Statements revealing how participants view themselves as academic writers	Interviews	"I'm not sure I'll ever sound like them."
Interactional	Revoicing	Descriptions of being reworded or overwritten by co-authors, especially without dialog	Feedback, Drafts, Interviews	Track changes show paragraph replaced; "She rewrote it all"
	Negotiation of feedback	How participants respond to suggested changes—compliance, resistance, or compromise	Feedback, Drafts, Interviews	"I kept the idea but used her wording"
	Rhetorical authorship	Statements about who gets to shape argument structure, framing, or disciplinary language	Interviews	"They said they'd handle the framing and lit"
	Perceived status	Reflections on the participant's inclusion, marginality, or authority within writing teams	Interviews	"Sometimes I felt replaceable."
Behavioral	Disciplinary alignment	Use of field-specific terminology, rhetorical moves, and accepted genre conventions	Drafts, Feedback	Replacing "low-quality fodder" with "suboptimal nutrient composition"
	Authorship attribution	Revisions related to plagiarism, originality, and clarity of intellectual ownership	Drafts, Feedback	"Everything in yellow indicates plagiarism" (Editor comment)
	Citation practice	Engagement with source use, critical citation, and alignment with field debates	Drafts, Feedback, Interviews	"I started citing older sources after Julia suggested it."

on the decisions he made or reactions he had. Prompts such as "your co-author's suggested change here; why did you keep or reject this change?" and "How does this comment make you feel about your writing?" elicited detailed reflections on both the affective and rhetorical dimensions of voice.

Ahmad participated in ten interviews over the 36-month period. These interviews captured a range of topics, including: his cognitive processes while planning and revising; metacognitive strategies for monitoring stance; emotional responses to feedback; and experiences of power and authority in collaborative authorship. Additionally, two interviews were conducted with Julia, Ahmad's primary co-author, to gain insight into her role in shaping his authorial development and the nature of their collaborative dynamic.

All interviews with Ahmad were conducted in Arabic by the first author, audio-recorded, and later transcribed. Key excerpts were translated into English by the first author and cross-checked by a professional translator for accuracy. Interviews with Julia were conducted in English. All data were securely stored using encrypted cloud-based systems.

3.3. Data analysis

A hybrid thematic analysis (Braun & Clarke, 2006) was used to analyze interview and textual data, combining deductive coding based on Zimmerman's (1995) PE framework with inductive, data-driven insights. Deductively, the three PE dimensions, intrapersonal, interactional, and behavioral, guided the initial coding structure. Inductively, we refined these categories to reflect how authorial voice was enacted in Ahmad's collaborative writing trajectory. Table 2 presents the coding scheme that operationalizes each dimension and maps the data sources used to examine the corresponding aspects of authorial voice.

The analysis was iterative and recursive. Interview transcripts and co-authored drafts were examined to identify moments where the participant expressed confidence, navigated power dynamics, or made rhetorical and disciplinary decisions. For behavioral authorial voice, coding followed an *a posteriori* logic, with categories emerging through socially contextualized reader reactions, particularly from EL1 co-authors (mainly Julia), journal reviewers, and editors, who influenced Ahmad's textual practices. These features were not defined in advance but inferred from instances where the participant was prompted to change disciplinary terminology, citation practices, or authorship attribution. For example, feedback on Ahmad's drafts led him to adopt more field-specific language and reframe how he cited sources, often in response to pointed editorial interventions.

To ensure analytical rigor, the study followed Lincoln and Guba's (1985) four trustworthiness criteria. Credibility was supported through prolonged engagement, member-checking, and triangulation of interviews and textual sources. Dependability was ensured by transparent analytic procedures, including an inter-coder reliability check on 20 % of the data. Transferability was achieved via thick description of case and context of writing, and confirmability through documentation of analytic decisions and reflexive practice throughout.

4. Findings: Ahmad's authorial voice development

4.1. Ahmad's intrapersonal authorial voice development

Ahmad's intrapersonal authorial voice was shaped not only by linguistic ability or academic ambition but also by his evolving engagement with the cognitive and metacognitive demands of collaborative writing. Rather than a purely internal process, Ahmad's ability to plan, monitor, and review rhetorical decisions was distributed across his co-authors, particularly in the earlier stages of his career. His authorial stance was formed through self-questioning and task interpretation, often mediated by his co-authors' knowledge, feedback, and discursive authority.

In early collaborations, Ahmad frequently questioned his right to write rhetorically visible sections of the text: Do I have the authority to write this section? Is my interpretation valid? Is it worth learning how to phrase this, or should I let my co-author do it? These questions reflect more than linguistic hesitation; they demonstrate limited cognitive engagement with rhetorical planning, particularly in relation to disciplinary voice and genre expectations. This was evident in his writing behavior. In his first co-authored article, Ahmad abstained from contributing to the introduction and literature review, even when he had ideas. As he explained: "I always had something to say, but I wasn't sure if I had the right to say it. I thought, maybe Julia knows how to say this better, or maybe what I'm saying isn't academic enough." (Int.1).

A telling moment came in a draft of their second article. Julia queried his use of the phrase "low-quality fodder", asking in a margin comment: "Is this a standard term? Can you clarify or provide a source?" (Draft 2, Comment 5). In the following version, Ahmad deleted the entire sentence: "Farmers in the region often rely on low-quality fodder, which reduces digestibility and limits growth." (Draft 2) and in Draft 3: [Sentence removed]. Rather than attempting to revise, Ahmad opted for deletion. In interview, he explained: "I thought maybe this was not the right term or too simple. Instead of finding another way to say it, I just deleted it. I didn't want to look wrong" (Int. 3).

Deleting the sentence did not just reflect self-censorship, but also a withdrawal from the reviewing and revision phase of the cognitive writing cycle. His ability to perform these functions was outsourced to his co-author, suggesting limited internal control over the rhetorical shaping of his ideas, and therefore his limited control over his authorial voice. His approach to writing at this stage was framed as task division, not co-construction: "There's no need for both of us to do everything. She's good at explaining; I'm good at numbers. That's more efficient." (Int.3).

This framing was not simply pragmatic; it reflected his metacognitive cost-benefit analysis of what was worth learning. When asked about improving his literature review skills, Ahmad noted: "To be honest, I don't know if it's worth the effort. It's not just about language. it's also about knowing how to sound like them. And I'm not sure I ever will." (Int.4). Here, Ahmad demonstrates an

awareness of the cognitive and discursive demands of authorial voice but chooses to defer them, perceiving the returns on investment as uncertain or unreachable. His learning trajectory was shaped by this internal dialog, reflecting low self-efficacy beliefs, situated within collaborative reliance and limited task ownership.

Ahmad's investment in learning how to write literature review began to change when external support waned and Ahmad needed to display more independence. When CARA's mentorship phase ended and Julia became less available, Ahmad was forced to reassess his role in the writing process. With fewer interventions and more responsibility, his cognitive agency increased. In the draft of his fourth article, he authored a full introductory paragraph for the first time. Julia's feedback marked a turning point: "This is promising. The structure is solid, and your argument is clearer here than in earlier drafts. Let's just work on softening the tone in a few places." (Julia, draft comment). This response was unexpected for Ahmad: "That comment really surprised me. I thought she would rewrite it, but she just made small suggestions. That gave me confidence, maybe I do know how to do this after all" (Int.7).

This moment reflects a shift in self-efficacy: Ahmad recognized not only his ability to contribute but also that his rhetorical decisions were being validated by a more experienced co-author. He began to engage more actively in the full cognitive cycle of writing, including initiating ideas, drafting, and revising. By the time of his sixth article, Ahmad reported taking primary responsibility for drafting several sections: "Before, I always waited for Julia to rewrite my parts. Now, I write the full section and just ask her to check the flow. It's still collaborative, but it feels like I'm actually co-authoring now, not just contributing" (Int.10).

This statement signals a reconfiguration of his internal representation of authorship. He no longer saw himself as a technical contributor but as a co-author with rhetorical voice and disciplinary agency. His planning became intentional; his revisions were guided by questions like "Does this sound confident?" or "How would this be read by reviewers?" indicating growing metacognitive awareness of audience and genre.

4.2. Ahmad's interactional authorial voice

Ahmad's interactional authorial voice developed through ongoing negotiation with co-authors, shaped by asymmetries in rhetorical authority, institutional status, and language expertise. Ahmad's case illustrates how these dynamics were navigated through a mix of silent deference, subtle resistance, and growing rhetorical agency.

In his early collaborations, Ahmad's rhetorical input was frequently overwritten. Drafts of his first article with Julia reveal full-paragraph substitutions, often without comment. For instance, his sentence "we believe this helps animals grow better" was replaced by Julia with "this supports more efficient protein utilization". No justification was provided. Ahmad later reflected: "She rewrote it all. It was still my idea, but not my voice. I started to recognize myself only in the tables" (Int.3). Ahmad's early authorial voice was functionally reduced to technical contribution: he provided the data, but not the framing.

At times, feedback initiated global structural changes that required Ahmad to either defend his rhetorical choices or relinquish them. In one draft, Julia commented: "This section doesn't work, maybe we should cut it and instead open with the economic rationale of the intervention?" Ahmad deleted the paragraph entirely: "I didn't want to argue. She knows how to start a paper. I thought, better to follow." (Int.4). This dynamic of silent compliance highlights the constraints of Ahmad's early interactional voice. He deferred to his co-author's rhetorical expertise, internalizing the notion that his way of writing was less legitimate.

Over time, however, Ahmad began to adopt more active, and selective, forms of negotiation. In a later article, Julia flagged the term "resource-poor farmers" as outdated and suggested replacing it with "smallholder farmers," while also advising him to "tone down the critique of donor agencies." Instead of deleting the section, Ahmad added a footnote citing "Al-Khaled (2002)" to justify his terminology: "I didn't want to remove my point completely. So, I made a compromise. I kept her language but kept my idea." (Int.7)

This moment marks a shift from submission to negotiation. Ahmad learned to separate surface-level lexical choices from the deeper conceptual claims he wished to retain. Julia recognized this change: "Ahmad started explaining his choices more. It used to be that he would just delete things or say nothing. Now he sends a comment saying, 'I prefer this term because…' That's new" (Julia, Int.2). This emergence of interactional voice, evident in Ahmad's growing ability to justify and contextualize his rhetorical decisions, was not about defiance, but about selective authorship. His increasing participation in the feedback loop reflects rising self-efficacy and rhetorical agency. Yet Ahmad's position varied across collaborations. In UK-based and African-based teams, he often felt peripheral: "Sometimes I felt replaceable. Like, if I didn't answer emails, they would just continue without me." (Int.5)

His role in such projects initially was frequently limited to statistical analysis or technical validation, with rhetorical framing left to L1 English speakers or senior scholars. In one email, a UK co-author wrote: "Can you double-check the regression outputs by Monday? We'll handle the framing and lit." This division of labor positioned Ahmad as a contributor, but not a co-author in the rhetorical sense. In contrast, his interactional voice was more prominent in collaborations with Syrian academics from the beginning: "In the Syrian team, I was the lead writer. They trusted my judgment, and I made most of the structure decisions." (Int.8). This difference underscores the relational and contextual nature of authorial voice. His increased agency was not only a function of his own development but also of the roles he was permitted, or expected, to play. Voice here was co-produced through mutual recognition and shared epistemic and geopolitical authority.

4.3. Ahmad's behavioral authorial voice

Ahmad's behavioral authorial voice is evidenced in (i) disciplinary discourse conventions, (ii) citation practices and scholarly alignment, and (iii) authorship attribution, among others.

4.3.1. Disciplinary discourse conventions

In early drafts, Ahmad often relied on translated phrases from Arabic that did not align with disciplinary norms in English-language life science. For instance, in his first English manuscript, he wrote: "The animal feed helped digestion and improved animal well-being" (Draft 1). This sentence was replaced by his co-author Julia in Draft 2 with: "The diet enhanced rumen microbial activity and feed efficiency". Track changes show that this substitution was made without comment. In the final published version, nearly all such generalized or informal phrasings were replaced with technical equivalents, terms such as "crude protein," "ruminal pH," and "metabolizable energy" appeared in place of Ahmad's more descriptive language.

Over time, Ahmad's own drafts began to show increased use of such terminology. In a later article, he independently used phrases like "dry matter intake" and "protein-to-energy ratio," which aligned with standard disciplinary terminology. These shifts were evident across successive drafts and reflect how Ahmad's behavioral authorial voice evolved to fit disciplinary expectations, not through explicit instruction, but through repeated cycles of co-author revisions and published outcomes.

Stylistic norms also became more prominent in his writing. In his earlier work, Ahmad resisted using abbreviations (e.g., CP for crude protein), preferring to spell out full terms. In one draft, Julia noted: "Try using the standard abbreviations here, too many full terms take up space and feel non-specialist." (Draft 5). By his third article, Ahmad had adopted standard abbreviations and integrated them fluently, writing for instance: "Total DM intake and CP digestibility were significantly higher in group B ($p < 0.05$)". This change marked a textual shift toward a behavioral voice more aligned with disciplinary convention, even if the process that led there involved unspoken correction rather than collaboration.

4.3.2. Citation practices and scholarly alignment

Ahmad's citation patterns reveal how behavioral voice is shaped by alignment with epistemic expectations. In early drafts, he cited mostly regional scholars—from Syria, Sudan, and Egypt, and prioritized recent studies. For example, one draft included: "Recent studies from Syria and Sudan confirm this trend (Al-Faraj, 2018; Mahmoud, 2016)". Julia revised this to: "Several foundational and recent studies have addressed this issue (Van Soest, 1967; Khan et al., 2015)". No justification was provided in the comment, but the intention was clear: the references were being used not only to substantiate claims but to situate the work within a recognized scholarly tradition.

In his later articles, Ahmad began to pre-empt these revisions. He included foundational citations "(e.g., Van Soest, 1994; NRC, 2001)" alongside newer references, and intentionally mixed Global North and South sources. This textual strategy became part of his behavioral authorial voice—signaling that he understood what counts as credible and "balanced" referencing in international journals. However, overcompensation sometimes occurred. In one article, 85 % of the references were from journals published in Europe or North America. Julia commented: "Let's not erase the regional context entirely, can we bring back some of the African studies you originally cited?" The final draft retained some regional citations while strategically highlighting the significance of the study. For example: "This aligns with recent findings from West Africa (Adebayo et al., 2019), though the broader trend is confirmed in North American trials (Jones et al., 2017)". Here, Ahmad's behavioral voice reflects strategic positioning, balancing regional knowledge with global epistemic legitimacy.

4.3.3. Authorship attribution

Ahmad's approach to attribution also shifted significantly in his co-authored texts. In his first article, several paragraphs were flagged by an editor for improper paraphrasing. The draft read: Draft 1: "Previous studies confirmed that animal diet improves performance and immunity." The editor's comment noted: "This closely resembles published formulations. Please revise to ensure originality." In response, the sentence was changed to: Draft 2: "Several studies have suggested a positive correlation between nutrient profile and immunological response (Smith et al., 2007; El-Amin, 2012)." Reflecting on this episode, Ahmad explained: "I realized I couldn't just rephrase what I read. I had to show it with sources and more scientific terms. It was safer to hide behind citations than to risk sounding like I copied." (Int. 2). This episode illustrates how Ahmad's behavioral voice developed under editorial pressure, as he learned to replace generalized phrasing with hedging, citation clustering, and disciplinary terminology to signal legitimacy and originality.

Ahmad's later drafts show increased use of hedging devices: "may suggest," "is likely influenced by", cautious attribution, and rephrased claims. These shifts appear consistently across final drafts and reflect a writer who has adapted his behavioral voice to institutional expectations about authorship and originality. His evolving sense of authorship also extended to self-citation. Initially,

Table 3
Summary of findings: Ahmad's collaborative authorial voice development.

Dimension	Early state	Mechanisms/turning points	Later state
Intrapersonal	Low self-efficacy; deferred rhetorical tasks; outsourced planning/revision; legitimacy doubts.	Validation from Julia's feedback; end of CARA mentorship; increased responsibility for openings.	Full engagement in planning–drafting–revising; stronger ownership of sections.
Interactional	Voice constrained by language/ institutional asymmetries; contributions overwritten; compliance.	Selective negotiation; strategic accommodation (keep concept, accept lexis); context-dependent agency.	More explicit justification of choices; variable agency across teams.
Behavioral	Descriptive/translated phrasing; regional citation bias; limited stance control.	Editorial pressure; uptake of disciplinary lexis; broadened citation strategy; cautious hedging/paraphrase.	Disciplined register (e.g., "dry matter intake"); balanced citations; rising self-citation as authority marker.

Ahmad avoided citing his Arabic-language publications, believing they lacked value. By his third article, he added: "This study builds on earlier field experiments conducted in Syria (Ahmad, 2009)". While one co-author questioned its inclusion, the citation remained, suggesting a more assertive textual positioning and a behavioral voice that included self-recognition as a knowledge producer.

Table 3 below provides an overall summary of the findings. In addition to showing the three aspects of collaborative authorial voice, this table also highlights both trajectory (from marginal to assertive) and conditions (mentorship, feedback asymmetry, disciplinary norms) that shaped Ahmad's collaborative authorial voice.

5. Discussion

The multidimensional framework used in this study, adapted from Zimmerman's (1995) Psychological Empowerment (PE) framework, offers a comprehensive framework for understanding authorial voice not just as presence or effect, but as developmental practice. Unlike previous frameworks that treat voice as primarily textual (e.g., Hyland, 2008) or social (e.g., Canagarajah, 2002), this framework captures the cognitive, relational/social, and rhetorical complexity of voice, particularly in collaborative contexts where authority is not assumed but earned and negotiated.

By applying the intrapersonal (cognitive/metacognitive), interactional (negotiated power), and behavioral (textual enactment) lenses to a longitudinal case, this study provides a more granular account of how an L2 scholar can grow into empowered, agentive academic writer, even within unequal writing relationships. Beyond its multidimensionality, the framework is particularly valuable for capturing voice as a developmental process, attuned not only to growth, but also to tensions, disruptions, and reconfigurations. In doing so, it responds to longstanding calls in the literature to bridge the social–cognitive divide (Hulstijn et al., 2014; Larsen-Freeman, 2007) in conceptualizing collaborative authorial voice. While cognitive accounts often overlook the role of power, and sociocultural frameworks sometimes lack specificity regarding internal micro-processes, the PE framework provides a systematic way to hold both perspectives in view.

5.1. Authorial voice as distributed cognition and emerging self-efficacy

Findings regarding the intrapersonal dimension highlight the cognitive and metacognitive complexity of voice development. Ahmad's early reluctance to engage with rhetorically visible sections reflected not only linguistic insecurity, but also uncertainty about the legitimacy of his disciplinary voice. This supports earlier work by Ivanič (1998), who emphasized that authorial identity is shaped by perceived entitlement to contribute. However, by integrating cognitive writing theory (Bereiter & Scardamalia, 1987; Flower & Hayes, 1981), this study adds an important layer: Ahmad's voice was shaped by his incomplete access to the planning, translating, and reviewing phases of writing—processes often taken over by his co-authors. Crucially, this was not simply a matter of individual ability but of structural positioning within asymmetrical collaborations. In such contexts, "perceived entitlement" is reinforced by the practical exclusion from key stages of text production, effectively limiting the opportunities through which an L2 writer can internalize rhetorical decision-making. This extends prior research by showing that authorial voice is constrained not only by writers' self-perceptions but also by the distribution of cognitive labor in collaborative writing, raising questions about how co-authoring practices can simultaneously scaffold and suppress the development of voice.

Thus, rather than progressing linearly toward independence, Ahmad's development illustrates distributed cognitive authorship: early on, co-authors functioned as external regulators of genre and stance, performing the cognitive labor Ahmad could not yet do alone. Only when external support receded did he begin to internalize these processes, evidenced by his increasing initiative in drafting and revising rhetorically dense sections. This shift supports Negretti's (2012) findings that metacognitive awareness, particularly of genre and audience, is essential for developing authorial presence. It also shows that investment is not only emotional or professional (Norton, 1995), but also cognitively selective: Ahmad chose what was "worth" learning based on perceived effort and symbolic return (Khuder & Petrić, 2022).

5.2. Authorial voice as negotiated power

Ahmad's trajectory also underscores the relational construction of voice through collaborative dynamics, as shown by findings regarding the interactional dimension. Early drafts reveal what Tardy (2009) and Prior (1998) describe as *revoicing*, where dominant co-authors reframe the text, often silently, thereby muting subordinate voices. Ahmad's initial deference, including the deletion of whole paragraphs, reflects the internalization of this hierarchy. His rhetorical authorship was constrained not by lack of ideas, but by his perception of who had the right to shape disciplinary discourse.

Over time, however, Ahmad developed a more negotiated authorial stance, learning to assert contributions through strategic moves, such as keeping conceptual points while adjusting language to fit co-author expectations. This asymmetry in authorial positioning is consistent with findings by Chen and Lee (2022), who argue that in unequal co-authoring relationships, writers often default to epistemic deference to maintain harmony, even at the expense of self-expression. Additionally, these moments illustrate what Chen and Lee (2022) identify as the transformative potential of conflict in collaborative writing: when handled carefully, disagreement can lead to growth in authorial voice. Ahmad's gradual shift from compliance to cautious contestation, seen in his annotated responses to feedback and explicit justifications, signals the development of interactional empowerment.

Notably, his ability to claim voice varied across collaborations. In teams involving EL1, Ahmad felt replaceable and relegated to technical contributions; in Syrian-led teams, he experienced greater rhetorical agency. This is in line with Lillis and Curry's (2010) work on academic in/visibility and suggests that interactional authorial voice is co-constructed through both micro-level collaboration

and macro-level geopolitics (Fogal, 2019). Voice is not only about "having something to say", but about being positioned, and positioning oneself, as someone who is heard. This reflects a broader issue of legitimization in academic writing, where the recognition of one's contributions is as important as the possession of knowledge itself (Lillis & Curry, 2010). Prior research shows that for many L2 scholars, particularly those working from peripheral contexts, legitimacy is not automatically granted but must be negotiated through alignment with dominant discourses (Canagarajah, 2002).

Additionally, our findings underscore that collaborative writing is not simply a social variation of solo authorship but a qualitatively distinct site for the construction of authorial voice. Ahmad's development cannot be understood as an individual trajectory alone; it was enabled, constrained, and reconfigured through his ongoing partnership with Julia. Cognitive processes such as planning and revising were frequently distributed between them: Ahmad often outsourced early rhetorical framing to Julia, while later he began to initiate drafts and negotiate revisions himself. Rhetorical decisions were also co-constructed, whether through Julia's revoicing of whole sections or Ahmad's selective retention of key terms against her suggestions, illustrating that argumentative structure and stance were outcomes of joint negotiation rather than solitary choice. Finally, the question of legitimacy was continuously mediated through this collaboration: Ahmad's authorial presence gained recognition not only when he developed confidence but also when Julia acknowledged his contributions as valid and publishable. In this sense, cognitive, rhetorical, and legitimizing processes were shared and re-aligned across drafts, confirming that collaborative authorship provides a unique space where voice is distributed, contested, and co-constructed.

5.3. *Voice-in-text as evidence of empowerment*

The behavioral dimension, how voice is textually realized, shows that rhetorical presence is both context-dependent and disciplinarily mediated. Ahmad's citation patterns, revisions to terminology, and eventual contributions to introductions demonstrate growing control over disciplinary discourse conventions, echoing Hyland's (2008) and Thompson's (2012) emphasis on stance and engagement as textual markers of voice. However, this study goes further by connecting textual change to underlying cognitive and relational developments, showing that behavioral voice is not simply a set of linguistic features but a dynamic indicator of empowerment within collaboration.

For example, Ahmad's early deletion of rhetorically charged terms (e.g., "low-quality fodder") illustrates what Lillis and Curry (2010) describe as the geopolitics of legitimacy: rather than risk being judged illegitimate by gatekeepers, Ahmad erased his contribution altogether. Such moments highlight how behavioral voice can register withdrawal as much as assertion. By contrast, his later use of field-specific terminology and his deliberate inclusion of both regional and Anglophone citations demonstrate an increasing ability to project legitimacy through disciplinary alignment, reflecting findings by Sun et al. (2022) on citation as a practice of positioning.

This trajectory also supports a shift away from a purely a priori coding of authorial voice (Hyland, 2005) toward a posteriori interpretations shaped by expert readers and collaborators (Tardy & Matsuda, 2009; Morton & Storch, 2019). Ahmad's ability to retain argumentative structure while softening tone, or to justify his lexical choices rather than delete them, reveals how behavioral voice emerges through iterative negotiation with co-authors and editors. In this sense, the observable residue of voice in the text mirrors the less visible cognitive and interactional processes of empowerment.

Importantly, Ahmad's case also resonates with longitudinal research on voice development (Dressen-Hammouda, 2014; Cheung & Lau, 2020), which shows that as writers gain genre familiarity, their texts increasingly reflect authoritative community-aligned voices. Yet our study adds a critical dimension: unlike individual writing, where enculturation is gradual and relatively unmediated, in collaborative publication behavioral voice is constantly re-negotiated, sometimes enabled and sometimes constrained by more powerful co-authors. This underscores that behavioral voice is not a stable outcome but an arena where legitimacy is contested, enacted, and co-constructed.

A critical point arises when the three layers of voice do not align. Authorial voice is most fragile when writers perceive themselves as legitimate and knowledgeable yet remain excluded from, or overwritten within, the interactional and textual layers of collaboration. In Ahmad's case, moments where he felt confident about his ideas but saw them deleted or reformulated by co-authors created tensions that undermined his sense of authorship. This mismatch illustrates that authorial voice is not only about developing entitlement or knowledge but about securing recognition of that legitimacy within collaborative processes. Where intrapersonal confidence, interactional dynamics, and textual enactment diverge, voice risks becoming fractured or suppressed.

6. Conclusion

This study explored how an L2 academic developed, negotiated, and asserted his authorial voice in collaborative academic writing. Through a multidimensional framework grounded in Zimmerman's (1995) PE framework, the findings reveal that voice emerges through an interplay of intrapersonal, interactional, and behavioral processes. Ahmad's authorial voice developed not in isolation, but through a progression from cognitive dependency to rhetorical autonomy, from deference to negotiation, and from textual invisibility to strategic assertion.

This framework makes two specific contributions to the field. First, it foregrounds collaborative writing as a distinct site for studying authorial voice, not merely as a social variation of solo authorship, but as a dynamic space where cognitive processes are shared, rhetorical decisions are negotiated, and disciplinary legitimacy is co-constructed. Unlike studies that treat voice as individual expression or textual footprint, this research shows how authorial control is gradually internalized through scaffolded interaction, particularly in contexts marked by linguistic, institutional, and geopolitical asymmetries. Second, the framework offers a productive

analytic tool for future research, enabling scholars to trace how voice is distributed across people, drafts, and feedback. It moves beyond static definitions by anchoring voice in writers' evolving capacities to plan, monitor, negotiate, and revise their rhetorical presence.

Additionally, the framework aligns with mixed- and multi-method research designs and is open to various methodological configurations. While this study employed TH and talk-around-text interviews as its main methods, the framework allows for methodological integration of other methods, such as those common in cognitive-oriented research (e.g., keystroke logging- see e.g., Khuder & Harwood, 2015) to explore the intrapersonal dimension or corpus linguistic techniques for the behavioral dimension. For instance, keystroke logging could capture real-time pauses, revisions, and reformulations that reveal the cognitive and metacognitive processes behind voice construction. Corpus techniques, in turn, could trace patterns of stance and engagement across drafts, providing systematic evidence of how textual voice evolves in collaborative contexts.

This study is not without limitations. It centers on one individual's trajectory, which, though richly documented, cannot capture the full variability of L2 co-authorship experiences. Future studies can explore voice development and voice shifts of all members of collaborative dyads and/or teams, including experienced academics writing in their L1. Additionally, future studies might compare co-authoring patterns across disciplines, language combinations, or power asymmetries to explore how these dimensions shape voice differently. Further, investigating the role of feedback genres (e.g., comments, conversations, edits) in shaping authorial negotiation would deepen our understanding of interactional dynamics.

We also recommend extending this framework to human–AI collaborative writing (Khuder, 2025b) by treating AI as a situated collaborator and tracing its effects across the three dimensions of authorial voice: intrapersonal (shifts in self-efficacy, reliance, and judgment), interactional (how writers negotiate, justify, and disclose uptake/rejection of AI suggestions with co-authors and reviewers), and behavioral (textual traces such as stance, engagement, terminology, intertextuality, and potential "voice drift").

Ultimately, this study argues that authorial voice in collaborative academic writing must be understood as a developmental, distributed practice, one that is deeply cognitive, persistently negotiated, and always entangled with the social architectures of knowledge making.

CRediT authorship contribution statement

Baraa Khuder: Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Bojana Petric:** Writing – review & editing, Methodology, Conceptualization.

Declaration of Competing Interest

None.

Acknowledgements

The authors would like to express their sincere gratitude to the participants who took part in this study. We are also thankful to the Council for At-Risk Academics (CARA) for their support, which made this work possible. Finally, we extend our appreciation to the anonymous reviewers for their constructive and thoughtful feedback, which significantly strengthened the quality of this manuscript.

Data availability

The data that has been used is confidential.

References

Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition*. Lawrence Erlbaum Associates.

Bowden, D. (1995). The rise of a metaphor: "Voice" in composition pedagogy. *Rhetoric Review*, 173–188. ⟨https://www.jstor.org/stable/465667⟩.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706QP063OA

Canagarajah, S. (2002). Multilingual writers and the academic community: Towards a critical relationship. *Journal of English for Academic Purposes, 1*(1), 29–44. https://doi.org/10.1016/S1475-1585(02)00007-3

Chen, X. (Winnie), & Lee, I. (2022). Conflicts in peer interaction of collaborative writing – A case study in an EFL context. *Journal of Second Language Writing, 58*, Article 100910. https://doi.org/10.1016/J.JSLW.2022.100910

Cheung, Y. L., & Lau, L. (2020). Authorial voice in academic writing: A comparative study of journal articles in English literature and computer science. *Ibadanérica, 39*(39), 215–242. https://doi.org/10.17398/2340-2784.39.215

Dressen-Hammouda, D. (2014). Measuring the voice of disciplinarity in scientific writing: A longitudinal exploration of experienced writers in geology. *English for Specific Purposes, 34*(1), 14–25. https://doi.org/10.1016/J.ESP.2013.10.001

Elbow, P. (1994). About voice and writing. In In. P. Elbow (Ed.), *Landmark essays on voice and writing*. Hermagoras Press.

Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication, 32*(4), 365. https://doi.org/10.2307/356600

Fogal, G. G. (2019). Tracking microgenetic changes in authorial voice development from a complexity theory perspective. *Applied Linguistics, 40*(3), 432–455. https://doi.org/10.1093/APPLIN/AMX031

Gourlay, L. (2009). Threshold practices: Becoming a student through academic literacies. *London Review of Education, 7*(2), 181–192. https://doi.org/10.1080/14748460903003626

Hulstijn, J. H., Young, R. F., Ortega, L., Bigelow, M., Dekeyser, R., Ellis, N. C., Lantolf, J. P., Mackey, A., & Talmy, S. (2014). Bridging the gap: Cognitive and social approaches to research in second language learning and teaching. *Studies in Second Language Acquisition, 36*(3), 361–421. https://doi.org/10.1017/S0272263114000035

Hyland, K. (2005). Metadiscourse: Exploring interaction in writing. *Continuum*.
Hyland, K. (2008). Disciplinary voices: Interactions in research writing. *English Text Construction, 1*(1), 5–22.
Ivanič, R. (1998). *Writing and Identity*. John Benjamins Publishing Company.
Jou, Y. (2019). Scaffolding L2 writers' metacognitive awareness of voice in article reviews: A case study of SFL-based pedagogy. *Journal of English for Academic Purposes, 41*, Article 100770. https://doi.org/10.1016/J.JEAP.2019.100770
Khuder, B. (2025a). Feedback-seeking behaviour as a self-regulation strategy in higher education: a pedagogical approach. Assessment & Evaluation in Higher. *Education, 50*(6), 861–875. https://doi.org/10.1080/02602938.2025.2476621
Khuder, B. (2025b). Enhancing disciplinary voice through feedback-seeking in AI-assisted doctoral writing for publication. *Applied Linguistics, 022*. https://doi.org/10.1093/applin/amaf022
Khuder, B., & Petrić, B. (2022). Academic texts in motion: A text history study of co-authorship interactions in writing for publication. *Journal of English for Research Publication Purposes, 3*(1), 51–77. https://doi.org/10.1075/jerpp.22001.khu
Khuder, B. (2021) Science in exile: EAL academic literacies development of established Syrian academics. PhD thesis, Birkbeck, University of London.
Khuder, B., & Harwood, N. (2019). L2 writing task representation in test-like and non-test-like situations. *Written Communication, 36*(4), 578–632. https://doi.org/10.1177/0741088319862779
Khuder, B., & Harwood, N. (2015). L2 writing in test and non-test situations: Process and product. *Journal of Writing Research, 6*(3), 233–278. https://doi.org/10.17239/jowr-2015.06.03.2
Larsen-Freeman, D. (2007). Reflecting on the cognitive-social debate in second language acquisition. *The Modern Language Journal, 91*, 773–787. https://doi.org/10.1111/J.0026-7902.2007.00668.X
Li, M., & Storch, N. (2017). Second language writing in the age of CMC: Affordances, multimodality, and collaboration. *Journal of Second Language Writing, 36*, 1–5. https://doi.org/10.1016/j.jslw.2017.05.012
Li, M., & Zhang, M. (2023). Collaborative writing in L2 classrooms: A research agenda. *Language Teaching, 56*(1), 94–112. https://doi.org/10.1017/S0261444821000318
Lillis, T., & Curry, M. J. (2010). *Academic writing in a global context*. Routledge.
Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
Mhilli, O. (2023). Authorial voice in writing: A literature review. *Social Sciences Humanities Open, 8*(1), Article 100550. https://doi.org/10.1016/J.SSAHO.2023.100550
Morton, J., & Storch, N. (2019). Developing an authorial voice in PhD multilingual student writing: The reader's perspective. *Journal of Second Language Writing, 43*, 15–23. https://doi.org/10.1016/j.jslw.2018.02.004
Negretti, R. (2012). Metacognition in student academic writing. *Written Communication, 29*(2), 142–179. https://doi.org/10.1177/0741088312438529
Negretti, R., & Khuder, B. (2024). Case studies. In M. Kessler, & C. Polio (Eds.), *Conducting genre-based research in applied linguistics: A methodological guide* (pp. 13–34). Routledge.
Norton, B. (1995). Social identity, investment, and language learning. *TESOL Quarterly, 29*(1), 9–31.
Petrić, B. (2010). Students' conceptions of voice in academic writing. In R. Lorés-Sanz, P. Mur-Dueñas, & E. Lafuente-Millán (Eds.), *Interpersonality: Multiple Perspectives on Written Academic Genres* (pp. 325–336). Cambridge Scholars Publishing.
Prior, P. A. (1998). *Writing/disciplinarity: A sociohistoric account of literate activity in the academy*. L. Erlbaum Associates.
Stock, I., & Eik-Nes, N. L. (2016). Voice features in academic texts – A review of empirical studies. *Journal of English for Academic Purposes, 24*, 89–99. https://doi.org/10.1016/J.JEAP.2015.12.006
Storch, N. (2013). Collaborative writing in L2 classrooms. *Multilingual Matters*.
Storch, N. (2019). Collaborative writing. *Language Teaching, 52*(1), 40–59. https://doi.org/10.1017/S0261444818000320
Sun, Q., Kuzborska, I., & Soden, B. (2022). Learning to construct authorial voice through citations: A longitudinal case study of L2 postgraduate novice writers. *System, 106*, Article 102765. https://doi.org/10.1016/J.SYSTEM.2022.102765
Tardy, C. (2009). *Building genre knowledge*. Parlor Press.
Tardy, C. (2012). Current conceptions of voice. In. In K. Hyland, & C. S. Guinda (Eds.), *Stance and voice in written academic genres* (pp. 34–48). Palgrave Macmillan. https://doi.org/10.1057/9781137030825.
Tardy, C., & Matsuda, P. (2009). The construction of author voice by editorial board members. *Written Communication, 26*(1), 32–52. https://doi.org/10.1177/0741088308327269
Thompson, P. (2012). Achieving a voice of authority in PhD theses. In In. K. Hyland, & C. S. Guinda (Eds.), *Stance and voice in written academic genres* (pp. 119–133). Palgrave Macmillan UK.
You, J. W. (2016). The relationship among college students' psychological capital, learning empowerment, and engagement. *Learning and Individual Differences, 49*, 17–24. https://doi.org/10.1016/J.LINDIF.2016.05.001
Zabihi, R., & Bayan, M. (2020). Are two voices better than one? Comparing aspects of text quality and authorial voice in paired and independent L2 Writing. *Written Communication, 37*(4), 512–535. https://doi.org/10.1177/0741088320939542
Zhang, M., & Plonsky, L. (2020). Collaborative writing in face-to-face settings: A substantive and methodological review. *Journal of Second Language Writing, 49*. https://doi.org/10.1016/J.JSLW.2020.100753
Zimmerman, M. A. (1995). Psychological empowerment: Issues and illustrations. *American Journal of Community Psychology, 23*(5), 581–599.

Baraa Khuder is an Associate Professor at Chalmers University of Technology. Her research examines scholarly writing with a focus on power dynamics, feedback practices, and how technology shapes researchers' writing processes and products. Working across multilingual contexts, she uses mixed methods to study how scholars develop voice, navigate academic networks, and sustain integrity in scholarly communication.

Bojana Petrić is Professor of Applied Linguistics at Birkbeck, University of London, UK. Her publications include *Experiencing Master's supervision: Perspectives of international students and their supervisors* (Routledge, 2017), *Thinking home: Interdisciplinary dialogues* (Bloomsbury, 2018) and *The thesis writing journeys of Bachelor's and Master's students: A transnational European perspective* (Multilingual Matters, 2025).