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AI as a Resource for Second Language Socialisation in Doctoral Thesis Writing: A Comparative Study of New Zealand and Malaysia

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ABSTRACT

The rapid advancement of generative artificial intelligence (AI) has reshaped academic writing practices in higher education, yet its role in the socialisation of second language (L2) doctoral students is still evolving. This study addresses how L2 doctoral students in two distinct contexts, New Zealand (an English dominant environment) and Malaysia (an English as a Second Language context), use AI tools in their thesis writing, and how these tools mediate their socialisation into academic discourse communities. Data were collected from two focus group interviews, one from New Zealand and one from Malaysia, with international doctoral students and analysed thematically through the lens of second language socialisation. Findings reveal that AI supports students at three levels: 1) linguistically, by providing grammar correction, vocabulary enhancement, and translation; 2) rhetorically, by scaffolding argument structures, theoretical frameworks, and literature synthesis; and 3) affectively, by boosting confidence while also eliciting hesitation such as guilt and dependency. The comparative analysis highlights contextual differences, with New Zealand L2 doctoral students emphasising linguistic refinement and identity negotiation, and Malaysian L2 doctoral students drawing on AI more for critical analysis and emotional reliance. These insights extend second language socialisation theory by conceptualising AI as a mediating resource in doctoral writing socialisation and point to urgent implications for supervisory practice, institutional policy, and ethical AI integration in postgraduate education.

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1. Introduction

1.1 Study Background

Doctoral thesis writing represents one of the most demanding aspects of higher education, particularly for second language (L2) doctoral students who must navigate complex linguistic, rhetorical and disciplinary expectations of doing research and writing academic English [3]. This process has often been conceptualised as a form of academic discourse socialisation [7,11], where students acquire and negotiate the conventions of scholarly communication through interaction with supervisors, peers, texts, and institutional structures. Within these perspectives, doctoral writing is not simply an individual cognitive but also a socially-mediated practice that shapes and is shaped by students' linguistic development, scholarly identities, and participation in academic communities.

Once limited to human agents and textual artefacts, the ecology of doctoral writing now includes generative artificial intelligence (AI) applications (e.g., ChatGPT, DeepL, Jasper) as a readily available and constantly accessible resource that has introduced a new dimension to the academic discourse socialisation process. For many L2 doctoral students, these tools offer potential support in areas where they have historically encountered challenges, such as grammar, vocabulary, cohesion, and disciplinary framing (Phyo, Nikolov, and Hódi 2024). Yet alongside these affordances, AI raises concerns about dependency, authenticity, originality [14].

Due to the overwhelming pervasion of AI tools in higher education settings, existing studies have tended to focus on pedagogical applications of AI in classroom contexts and on ethical debates about plagiarism and academic integrity [15]. Unfortunately, this has left doctoral students, particularly those attempting to write theses in a second language, mostly unaccounted for in the empirical research. Beyond the ethical concerns of AI use in doctoral thesis writing, a noticeable gap remains in our understanding of how doctoral students are using these tools through the developmental lens of second language socialisation. Given that the experiences of L2 doctoral students often include simultaneous negotiation of advanced disciplinary literacy, linguistic barriers, and identity formation [13,17], it seems prudent to examine how L2 students may draw on AI differently, depending on the availability of other resources, institutional policies and disciplinary cultures. To that end, it would be beneficial to compare these behaviours across different sociolinguistic contexts. Furthermore, any variations might reveal how context shapes the role of AI as a mediating resource in doctoral socialisation.

Therefore, in this study, we investigate how L2 doctoral students who were studying in New Zealand (an English-dominant environment) and Malaysia (an English as a Second Language (ESL) environment) use AI tools in their thesis writing and how this shapes their socialisation into academic discourse. Drawing from second language socialisation (L2S) [8], we conceptualise AI as an emergent resource that interacts with linguistics, rhetorical, and identity dimensions of doctoral writing. Specifically, this study is driven by two research questions:

1. In what ways do students use AI tools as resources for linguistic, rhetorical and identity related socialisation?
2. How do these uses differ across two sociolinguistic contexts between New Zealand and Malaysia?

1.2 Literature Review

1.2.1 Second language Socialisation in doctoral writing

Second language socialisation (L2S) emphasises how language learners acquire not only linguistic competence but also the values, practices and identities of target discourse communities through interaction with others [7]. Within doctoral education, L2S has been applied to explore how international L2 students are socialised into disciplinary discourse through supervisors, peers, institutional resources, and academic texts. For example, Li and Han [13] showed how teacher feedback functions as both linguistic correction and a mechanism of identity (re)construction, positioning Chinese postgraduate students within particular identity categories that affected their confidence, investment and participation in academic discourse. Nam and Beckett [17] similarly found that Korean postgraduate students in the U.S. encountered significant challenges in socialising into academic writing, where institutional resources were underutilised and students relied heavily on peer advice and sought intertextual resources, highlighting gaps in institutional scaffolding. Thus, the second language socialisation process is dynamic, involving negotiation, resistance and identity transformation.

Doctoral writing, especially the thesis, is central to this socialisation. As Curry and Lillis [5] argued, L2 doctoral students face the dual challenge of mastering advanced disciplinary content while also producing extended texts in a second language. Duff and Anderson [8] identified two main roles in second language socialisation: 1) Mentors, such as supervisors, textbooks, online tools, or other resources that provide guidance, and 2) novices or newcomers, such as doctoral students. Much of the research on second language socialisation in doctoral writing topic has focused on the interplay between the human actors (i.e., supervisors and students), meaning less attention has been given to non-human or digital resources as agents such as AI.

1.2.2 AI in higher education writing

The integration of AI tools such as ChatGPT, Grammarly, Quillbot, and Paperpal has opened new possibilities for academic writing support. Studies suggest that these tools offer substantial benefits in proofreading, vocabulary enhancement, idea generation, and text organisation ([1]. For L2 writers, AI can serve as a form of scaffolding by providing immediate feedback on grammar and style, thus reducing cognitive load and allowing more focus on content development [19]. At the same time, scholars caution against risks. Over-reliance on AI seems to erode students' critical thinking and writing skills [6]. Concerns have also been raised about plagiarism, authenticity, and the reliability of AI outputs, which may be inaccurate or overly general [12]. Consequently, the rise of AI-detection software creates ethical tensions, as false positives may unfairly penalise students [9]. Despite growing discussions, empirical studies exploring doctoral students' lived experiences with AI remain limited. Existing work tends to focus on undergraduate or classroom contexts rather than postgraduate research writing.

Summarily, the relevant literature highlights the persistent challenges faced by L2 doctoral students in thesis writing and the potential of AI to act as a supportive resource. However, what remains underexplored is how AI tools function within the broader ecology of second language socialisation. This study addresses this gap by framing AI as a resource for L2S in thesis writing. It examines how AI mediates linguistic, rhetorical and identity dimensions of doctoral writing, and how these practices vary across two different sociolinguistic contexts between English-dominant and ESL communities.

2. Methodology

2.1 Research Design

In this study, we adopted a qualitative comparative case study design to examine how L2 doctoral students in New Zealand and Malaysia use AI tools as resources in their thesis writing. A qualitative approach was appropriate as it allowed us to explore students' lived experiences, associated meanings, and perceptions in rich detail [4]. By focusing on two district sociolinguistic contexts, New Zealand (English-dominant) and Malaysia (English as a Second Language), this study provides comparative insights into how contextual factors mediate students' adoption of AI within their academic discourse socialisation.

2.2 Participants

This study involved four L2 doctoral students from a research-intensive university in New Zealand and three L2 doctoral students from a research university in Malaysia. All seven participants were social sciences doctoral students from education and language programmes who were writing their theses in English as an additional language, which aligns directly with the focus of this study on second language socialisation in academic writing. In the New Zealand group, all participants were international students enrolled in the doctoral program, whereas the Malaysian group included a mix of local and international doctoral students. Recruitment was conducted through postgraduate networks and email invitations.

All participants provided informed consent and were assured of confidentiality and the right to withdraw. To further protect their identities, participants were assigned identifying codes based on their country (i.e., MYS for Malaysia, NZL for New Zealand) with subsequent numbers used to help distinguish which quotes are assigned to each participant. Pertinent details about each participant are outlined in Table 1.

Table 1
Participant details

Participant	Gender	Country of origin	Year of candidature	University
MYS1	Female	China	Third year	Malaysia
MYS2	Female	Malaysia	First year	Malaysia
MYS3	Female	Saudi Arabia	Third year	Malaysia
NZL1	Female	China	Second year	New Zealand
NZL2	Male	Malaysia	Fourth year	New Zealand
NZL3	Female	Iran	Second year	New Zealand
NZL4	Female	China	First year	New Zealand

2.3 Data Collection

Data were collected through two semi-structured, virtual focus group interviews via Microsoft Teams – one with New Zealand participants and one with Malaysian students in 2024. The semi-structured interview questions of pertinence here include the following:

1. Do you use AI tools in your thesis writing?
2. What tools are you using and how do you use the tools?

The focus group format enabled participants to share their individual experiences, build on each other's ideas, and negotiate meanings collectively [16]. Each session lasted approximately 60 to 90

minutes and was recorded with permission. The recordings were transcribed verbatim and minor editing was performed to improve readability while preserving the essence of participants' voices.

2.4 Data Analysis

The transcripts were analysed using thematic analysis [10]. Analysis proceeded through the following stages:

1. Reading and re-reading transcripts to identify initial codes.
2. Systematically coding data segments related to the use of AI.
3. Collating codes into broader themes such as linguistic support, rhetorical scaffolding and identity/emotional negotiation.
4. Conducting a comparative analysis by identifying similarities and differences between the New Zealand and Malaysia groups.

To strengthen trustworthiness, we independently reviewed codes and themes before reaching consensus. Member checking was also conducted by sharing preliminary findings with selected participants for feedback.

2.5 Ethical Considerations

Ethical approval was obtained from the host institutions' research ethics committees from both universities. Participants were informed of the purpose of the study, the voluntary nature of participation, and the secure handling of data. Given the sensitivity surrounding AI use in academic contexts, care was taken to reassure participants that their disclosures would not affect their academic standings.

3. Findings

Data from the focus group discussions revealed that the L2 doctoral students in both New Zealand and Malaysia relied on AI tools as resources for their academic discourse socialisation. AI mediated their linguistic, rhetorical and identity-related development though in different ways across the two contexts.

3.1 Linguistic Socialisation

Participants in both contexts identified linguistic difficulties, particularly grammar, vocabulary choice, and sentence structure as central challenges in thesis writing. AI tools were widely used as proofreaders and vocabulary advisors. In the New Zealand group, students highlighted how tools such as Grammarly, QuillBot, and ChatGPT helped refine grammar and expand lexicons, ensuring that their writing sounded appropriately academic and polite.

I know the meaning of a word, but I don't always know the right context and tone. ChatGPT gives me options, and I can choose the word that feels more respectful or academic. (NZL1)

I use Grammarly every day. It catches the small mistakes that I don't notice. (NZL2)

For the Malaysia group, linguistic support often extended to translation and academic word substitution. One student from China described drafting in her first language before using AI (particularly DeepL Writing) to ensure accuracy and fluency in English.

Sometimes I think in Chinese, but when I write it in English, it doesn't make sense. DeepL Writing helps me to rephrase into academic English. (MYS1)

For me, [the literature review] is very difficult because I worry I cannot understand the previous researchers' main idea and when I try to organise my words, I cannot explain them clearly. (MYS2)

While New Zealand L2 students focused on linguistic refinement within English, Malaysian L2 students emphasised cross-linguistic translation and academic register.

3.2 Rhetorical and Disciplinary Socialisation

Another key theme concerned how AI supports rhetorical socialisation such as organising arguments, developing theoretical frameworks, and engaging with disciplinary literature. For New Zealand students, AI was used primarily to brainstorm logical flow in sections such as the discussion and introductions. Students noted that ChatGPT could generate alternative ways of structuring arguments which they adapted to suit their theses.

When I am writing the discussion, I struggle with how to link my findings to other scholars. I ask ChatGPT to show different ways, then I rewrite it in my own words. (NZL3)

Sometimes I just paste my paragraph into QuillBot to check if it can be rephrased in a better way. (NZL4)

In contrast, Malaysian students relied heavily on AI for literature synthesis and theoretical framing. Tools such as SciSpace and Google Bard AI were used to summarise articles and suggest conceptual directions.

I use SciSpace to summarise papers, especially when I have 20 articles to read. It saves a lot of time. (MYS1)

Critical writing is hard when we have to compare and contrast with other people's research. It's tricky. (MYS2)

These findings suggest that New Zealand students used AI mainly for argument flow and presentation, while Malaysian students used AI to navigate dense literature and identify theoretical positions.

3.3 Identity and Emotional Socialisation

Beyond linguistic and rhetorical support, AI played a significant role in students' identity formation and emotional experiences as emerging academics. In the New Zealand group, students expressed ambivalence as AI boosted confidence but also triggered self-doubt.

Sometimes I wonder if AI can do this so well, then what is my value? I compare myself to AI and feel inferior. (NZL4)

It's like a non-judgmental partner, I don't feel embarrassed asking it stupid questions. (NZL3)

For Malaysian students, AI was often framed as a companion in the PhD journey. Reducing loneliness and stress. However, participants also reported feelings of guilt and dependency.

AI reduces the loneliness of doing a PhD. It feels like someone is there to help me. (MYS3)

I feel grateful because it helps, but also guilty. I don't want to depend on it too much because I need to practice my writing skills. (MYS1)

Some participants in both groups reframed AI positively, suggesting that it pushed them to read more deeply after receiving general summaries from AI outputs. This highlights how AI can act as a motivator for further learning rather than replacement for this essential doctoral writing skill. Therefore, New Zealand students' identity concerns centred on intellectual worth relative to AI while Malaysian students emphasised emotional reliance and guilt in balancing support with independency. A cross-context comparison of these findings is laid out in Table 2.

Table 2

Summarises the key similarities and differences across the two contexts

Dimension	New Zealand (English-dominant)	Malaysia (ESL context)
Linguistic	Grammar refinement, connotations, politeness in emails	Translation from first mother tongue/first language(L1), academic vocabulary substitution
Rhetorical/Disciplinary	Structuring arguments, brainstorming flow	Summarising literature, developing theoretical frameworks
Identity/Emotional	Confidence vs self-doubt, questioning value	Gratitude vs guilt, emotional reliance on AI

4. Discussion

This study examined how L2 doctoral students in New Zealand and Malaysia use AI tools in their thesis writing, and how these practices contribute to their second language socialisation. The findings show that AI tools now function as a new type of socialising resource alongside supervisors, peers, and disciplinary texts. In terms of its influence, AI seems to mediate linguistic, rhetorical, and identity-related development. This discussion situates these findings within L2S theory, highlights the contextual variations between the two cohorts, and outlines implications for doctoral education.

4.1 L2 Doctoral Students' Use of AI Tools

Consistent with earlier research regarding L2 doctoral writing challenges [3,18], students in both contexts relied on AI for grammar correction, vocabulary refinement, and stylistic adjustment. However, while New Zealand students primarily used AI for fine-tuning linguistic nuances such as connotations and politeness, Malaysian students used it for translation and registering shifts from L1 to academic English. This shows how AI tools act as linguistic mediators, providing real-time scaffolding that supports entry into academic discourse.

At the rhetorical level, AI was used differently across contexts. New Zealand students used it to organise the logical flow of arguments and sections such as discussions and introductions, while Malaysian students used it to navigate literature and theoretical frameworks. These differences reflect the contextual affordance and constraints of English-dominant and ESL environments. However, these differences may also reflect the stage of doctoral study rather than purely contextual factors. This suggests that AI use is shaped not only by sociolinguistic context but also by students, research trajectory and stage of candidature.

AI also shaped students' identities and emotions as emerging academics. Similar to previous studies that highlight the affective dimensions of doctoral writing [2,13], students' experiences gratitude and confidence, but also guilt, dependency and self-doubt. New Zealand students often compared themselves unfavourably to AI, questioning their intellectual worth. Malaysian students framed AI more as a companion in the lonely PhD journey, but worried about over reliance. These responses illustrate how AI is not only a technical aid but also socialising presence that influences how students perceive themselves as legitimate members of academic communities.

4.2 Extending Second Language Socialisation Theory

This study contributes to L2S theory by conceptualising AI as a new mediating resource within the socialisation ecology. Traditionally, L2S research emphasised human agents (supervisors, peers, faculty members) and textual artefacts (articles, dissertations). The findings show that AI now plays a parallel role, offering linguistics scaffolding, rhetorical modelling and affective support. At the same time, AI complicates socialisation. It introduces ambivalence into identity formation, raises ethical dilemmas about authenticity, and varies in impact depending on sociolinguistic context. These insights broaden L2S by incorporating digital and algorithmic resources as part of doctoral students' socialisation into academic discourse.

Figure 1 illustrates how AI mediates students' second language socialisation in thesis writing across linguistic, rhetoric and identity dimensions. The framework also highlights contextual variation, New Zealand students emphasised on linguistic refinement and identity negotiation, while Malaysian students relied more on AI for critical analysis, translation and theoretical development.

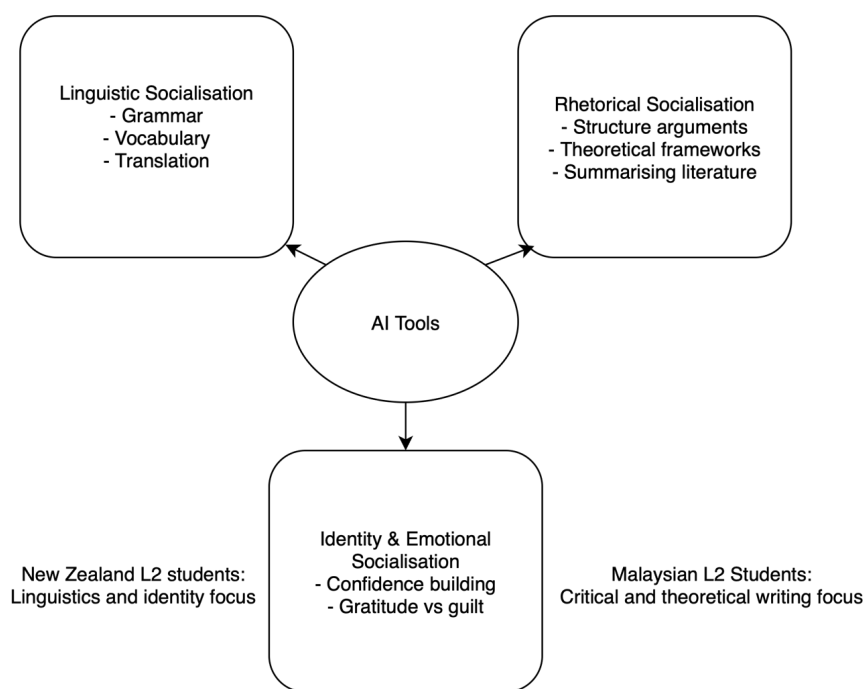


Fig. 1. AI as a resource for second language socialisation in doctoral thesis writing

5. Conclusion

This study has explored how L2 doctoral students in New Zealand and Malaysia use AI tools as resources in their thesis writing and how these practices mediate their academic discourse socialisation. Through a comparative focus group design, the findings highlight that AI support students at three interrelated levels: linguistic socialisation, rhetorical socialisation and identity/emotional socialisation. The comparative perspective revealed contextual variation. In New Zealand, students mainly use AI for linguistic refinement and identity negotiation. In Malaysia, students relied more AI for critical analysis, translation and theoretical development. These differences illustrate how sociolinguistic environment shape the role of AI in doctoral education.

Conceptually, this study extends L2S by positioning AI as a new mediating resource within the ecology of doctoral writing. While supervisors, peers, and texts remain crucial, AI now provides immediate, interactive scaffolding that influences students' linguistic, rhetorical and identity trajectories. Practically, the findings underscore the need for clear institutional policies and training. Universities should recognise AI as part of doctoral students' writing practices, provide guidelines and workshops for ethical and effective use, support supervisors to engage critically with AI alongside students, and ensure equitable access to AI resources across contexts. By framing AI as both a support and a challenge, this study underscores the importance of responsible integration of technology into doctoral education.

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