UNIVERSITY OF SZEGED
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NON-NATIVE ENGLISH-SPEAKING DOCTORAL STUDENTS' ENGLISH ACADEMIC WRITING EXPERIENCES IN HUNGARY: A MIXED-METHODS STUDY

DOCTORAL DISSERTATION

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ABSTRACT

Doctoral programs set significant expectations for students, requiring them to autonomously and effectively complete their various doctoral tasks within specified timeframes (Hendry & Farley, 2004; Kearns & Gardiner, 2006; Lukianova et al., 2019). Novice writers with limited experience in discipline-specific academic writing, who come from contexts where English is not an official language, tend to face challenges in meeting the expected standards of English academic writing of their respective doctoral schools (Al-Khataybeh, 2022; Gosling & Noordam, 2006; Hyland, 2016a; Lin & Morrison, 2021; Rezaei & Seyri, 2019). The struggle with academic English at the doctoral level presents substantial obstacles when composing research reports, articles, and dissertations, thereby impeding students' abilities to effectively disseminate research findings and satisfy publication requirements (Lin & Morrison, 2021; Ma, 2019; Odena & Burgess, 2017; Paltridge, 2014).

This multi-phase research project investigated non-native English-speaking (NNES) doctoral students' self-assessments of their English academic writing abilities and explored the interplay of various factors. These factors included self-perceived knowledge and abilities in English academic reading (EAR), English academic writing (EAW), conducting doctoral research, perceived feedback quality, coping with emotions, and factors positively affecting students' motivation when facing EAW demands throughout the PhD journey. The target population was NNES doctoral students studying in English-medium PhD programs across Hungary, using English as the lingua franca. Following Cresswell (2012) and Mackey & Gass (2011), an exploratory sequential mixed-method research design was adopted to fulfill the research aim.

Therefore, the project comprised two phases: the first one was an exploratory qualitative study, and its findings as well as a comprehensive overview of the literature were used to create a survey. Findings of the exploratory qualitative study revealed a shared awareness among NNES doctoral students (N=13) regarding their need to improve their EAW skills (Phyo et al., 2022d). This outcome highlighted the importance of structured EAW instruction tailored to doctoral students' specific needs for successful dissertation completion (Phyo et al., 2024b) and it is aligned with previous research (Gupta et al., 2022; Jomaa & Bidin, 2017; Lin & Morrison, 2021). The results of the survey showed participants' (N=255) increased confidence in self-assessing EAW (Phyo et al., 2023c) and research abilities compared to the beginning of their PhD studies. Supporting students' EAW competence throughout their doctoral journey emerged as crucial, with gender differences and English proficiency levels influencing self-assessment and development. Moreover, the study revealed significant positive associations between EAW and factors such as English academic reading, research abilities, feedback, coping with emotions, and EAW motivational factors including support from respective academic communities, underscoring the interconnectedness of these factors and their impact on students' EAW success (Phyo et al., 2022c, 2022b, 2024a). These findings reinforce conclusions drawn from the exploratory study.

In the survey, students were also asked to provide their personal metaphors describing their EAW experience and to mention the type of support they needed to improve their EAW abilities. Metaphor analysis results showed students were fully aware of both positive and challenging aspects of the EAW process at the doctoral level, corroborating the results of the exploratory study and the quantitative study, further emphasizing the significance of metaphors as a valuable research approach in understanding educational phenomena (Phyo et al., 2023a).

In terms of academic support, students emphasized specific types of support needed to improve their EAW abilities. The analysis underscored the importance of explicit instruction and tailored support addressing NNES doctoral students' diverse needs in their EAW development. It was also found that many novice NNES writers were not ready to start doctoral-level writing as soon as they joined their PhD programs; however, they gained confidence and motivation as a result of the positive impact of EAW support during their doctoral journey. These findings are aligned with previous research (Chatterjee-Padmanabhan & Nielsen, 2018; Gupta et al., 2022; Jomaa & Bidin, 2017; Lei & Hu, 2019; Wang & Parr, 2021; Xu & Zhang, 2019) and supported the conclusions drawn from the exploratory study and survey (Phyo et al., 2023a, 2024a).

In conclusion, this mixed-methods research project provides comprehensive insights into the EAW experiences of international doctoral students enrolled in 65 PhD programs across Hungary. As novice NNES authors, students lacked confidence in their academic writing abilities at the start of their PhD studies. Furthermore, variations were observed across participants' English proficiency levels and gender. Despite these variations, all students in the study demonstrated progress in their EAW over the academic years spent in their PhD programs. This progress is evidenced by the statistically significant improvement between their self-assessments at the start of PhD studies and at the current point. Moreover, students' EAW abilities were positively and significantly related to their proficiency in conducting research and academic reading comprehension abilities. The study also revealed additional factors related to students' EAW abilities: their motivation, ability to cope with emotions, and feedback. The significantly positive relationships among these factors underpin the dynamic nature of students' EAW improvement over the academic years and the complexity of EAW experienced by students from diverse NNES backgrounds while fulfilling doctoral requirements. Therefore, this study underscores the necessity of structured support to empower students in addressing challenges in academic writing in English and successfully meeting the demands of their doctoral programs.

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Contents

LIST OF ACRONYMS

AIC	Akaike's Information Criterion
ANOVA	Analysis of Variance
AVE	Average Variance Extracted
BIC	Bayesian Information Criteria
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Composite Reliability
df	Degree of Freedom
EAL	English as an additional language
EAP	English for Academic purposes
EAR	English Academic Reading
EAW	English Academic Writing
ERIC	Educational Resources Information Centre
ESP	English for Specific Purposes
KMO	Kaiser-Meyer-Olkin
M	Mean
NNES	Non-native English-speaking
RMSEA	Root-Mean-Square Error of Approximation
SD	Standard Deviation
S.E.	Standardized Error
SRMR	Standardized Root Mean Square Residual
TLI	Tucker–Lewis Index
WoS	Web of Science

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CHAPTER 1. INTRODUCTION

Chapter 1 consists of four sections. The first section provides a concise overview of the role of English academic writing in doctoral education. Following that, the research context in which the study is conducted is described, providing a comprehensive understanding of the setting. In the third part, the problem statement of the research is outlined, clearly defining the specific area that this study aims to explore and contribute to. The chapter concludes by providing readers with an overview of the overall structure of the dissertation, presenting a roadmap of the subsequent chapters and their respective content.

1.1. Introduction

English academic writing (EAW) is a critical component of doctoral education, serving as the foundation for success in the rigorous journey of pursuing a doctoral degree. As the world becomes increasingly interconnected, the ability to communicate research findings, engage in scholarly discourse, and produce high-quality dissertations in English is paramount (Di Bitetti & Ferreras, 2017; Hyland, 2020; Starfield & Paltridge, 2019; Swales & Freak, 2011). This dissertation embarks on an exploration of the EAW abilities of non-native English-speaking (NNES) doctoral students within the context of Hungary, where English is used as an academic lingua franca for both faculty and students.

1.2. Research context

This section provides a comprehensive overview of the influence of foreign languages on the Hungarian context and the status of English as a foreign language in Hungary, where my studies were conducted. Despite Hungarian belonging to the Finno-Ugric language family, which distinguishes it from the Indo-European languages commonly spoken in other European countries, the significance of foreign language proficiency in Hungary is clearly evident in the necessity to communicate with citizens of neighboring and other European countries (Medgyes & Nikolov, 2014).

During the period from 1949 to 1989, Russian was taught at all levels of the school system for political reasons, although it was not embraced willingly by Hungarians due to its association with oppressive power. The mandatory teaching of Russian reflected the country's close ties to the Soviet Union during that time (Dörnyei & Csizér, 2002). However, with the political transition in 1990 and the subsequent opening up of Hungary to the world, the prominence of Russian gradually declined, making way for the emergence of other foreign languages, particularly English and German. In the Hungarian education system, English and German have emerged as the dominant foreign languages since the end of the Soviet occupation. There has been a growing interest among students in learning English, driven by its status as the lingua franca in fields of science, business, and higher education. English proficiency has become increasingly valued, as it opens doors to international opportunities and facilitates communication in a globalized world (Nikolov & Csapó, 2010).

Today, English plays a significant role in Hungarian universities, particularly as a medium of instruction and communication in higher education. While Hungarian is the official language of the country, Hungarian universities have recognized the need to internationalize and adapt

to the global educational landscape. By offering programs in English, they aim to attract international students, promote cultural diversity, and provide opportunities for collaboration and exchange with academic institutions worldwide (Kasza, 2018; Kovacs & Kasza, 2018).

Programs using English as a medium of instruction at Hungarian universities now cover a wide range of disciplines, including business, economics, engineering, computer science, social sciences, humanities, and natural sciences. These programs cater to the interests and needs of both domestic and international students seeking high-quality education in an international environment. They offer students opportunities to study in English while immersing themselves in a multicultural and globally oriented academic setting (Kovacs & Kasza, 2018; Novak & Morvai, 2019; Vincent et al., 2021). Hungary hosts a high number of international students using English as their academic lingua franca (Erturk & Nguyen Luu, 2022; Hosseini-Nezhad et al., 2019; Wu & Rudnák, 2021). According to the Stipendium Hungarian (SH) records, in the fall semester of the 2021/22 academic year, 2,172 students studied in PhD programs as SH grantees in Hungary. A total of 184 doctoral programs offered SH scholarships; overall, however, many more, 304 programs, were taught in English at Hungarian universities (email communication 3/7/2022 with Kitti Nemeth). Moreover, the significance of English proficiency extends beyond the realm of education. English language skills have become highly valued in the job market, both domestically and internationally in Hungary. Proficiency in English enhances employability and opens up a wider range of career opportunities, as English is widely used in various professional domains and serves as a means of communication with global partners (Bajzát, 2017; Császár et al., 2023).

1.3. Problem statement

English academic writing at the doctoral level has received significant attention from researchers worldwide, particularly due to the increasing internationalization of higher education and the diverse and inclusive nature of doctoral programs (Barnett, 2010; Hyland, 2018; Swales, 2004). The demanding nature of doctoral writing has prompted numerous studies from various perspectives, such as supervisory, pedagogical, and contextual (e.g., Delyser, 2003; González-Ocampo & Castelló, 2018; Odena & Burgess, 2017). Researchers have also explored the challenges posed by doctoral writing (e.g., Badenhorst & Xu, 2016; Lin & Morrison, 2021; Xu & Zhang, 2019). However, despite the growing body of research on EAW at the doctoral level, there is a research gap regarding the changes non-native-English speaking (NNES) doctoral students experience in these abilities over the years of their PhD studies from the starting point of their doctoral journey to the current stage in their studies.

Furthermore, no study has comprehensively examined the interrelationships between various factors, including students' self-perceived English literacy background, including their EAW abilities at the start and current stage of their PhD studies, English academic reading (EAR) abilities, self-perceived knowledge and abilities in conducting research tasks, coping with emotions, the perceived quality of feedback students received and factors positively affecting students' motivation during the doctoral journey such as support from respective academic communities. By addressing this gap, the present study aims to contribute to the

understanding of NNES students' EAW experiences, the process of integrating into their respective academic communities, the dynamic changes during their studies, particularly in relation to other aspects such as feedback, managing emotions, and motivation. In addition, this study investigates NNES doctoral students' EAW experiences at two different time points (at the starting and at the current point in their PhD studies) by employing a large-scale quantitative research design. In this respect, the project is innovative, as no previous research has tried to examine the temporal aspect in a survey.

Furthermore, this study aims to investigate how NNES doctoral students perceive and interpret their English academic writing (EAW) experience while navigating the requirements of their doctoral programs by examining their personal metaphors they used to describe their EAW journey and by analyzing the support they deemed necessary to enhance their EAW abilities.

This research project sheds light on a context, Hungary, where English functions as an academic lingua franca; however, there is limited investigation into the EAW experiences of NNES students studying in Hungary as they work towards completing their doctoral requirements. Therefore, this context offers an opportunity to investigate an underexplored area as no research has been conducted on the above aspects.

Thus, the research project is meant to contribute to the understanding of NNES doctoral students' experiences with EAW in an English-medium doctoral education environment with a distinctive perspective. By enriching the existing literature, it expands our understanding of the challenges encountered by NNES doctoral students during their academic writing trajectory.

1.4. Structure of the dissertation

The dissertation consists of eight chapters, each focusing on specific aspects of the research. A brief description of the four empirical studies is provided in Table 1.1.

Chapter 1 introduces the significance of English academic writing in doctoral education, describes the research context and outlines the problem statement. It also provides an overview of the dissertation's structure, guiding readers through the subsequent chapters.

Chapter 2 is an overview of the relevant literature. It provides a theoretical framework for understanding academic writing in English: it presents the characteristics of doctoral-level academic writing and the challenges NNES doctoral students face. The chapter concludes with the key findings of the selected empirical studies, offering insights into the lived experiences and difficulties encountered by NNES doctoral students in English academic writing.

Chapter 3 provides information on the research design and methodology of the dissertation. It provides a detailed account of the research questions I aimed to answer, participants, data collection instruments, and procedures of techniques used for data analyses. The procedure of ethical approval application is also presented.

Chapter 4 presents findings of the exploratory study (Phyo et al., 2022a), explaining the methodology, stating demographic profile of the participants, presenting the results of data analysis, discussing the results, and summarizing the key findings.

Chapter 5 presents the quantitative study of the research project (Phyo et al., 2022c, 2022b, 2023c, 2023d, 2024a). First, I outline the research methodology and the research questions. Then, I present the participants' demographic information, the research instrument, procedures, the results, and a thorough discussion of the findings.

Chapter 6 presents and discusses findings of doctoral students' English academic writing experiences via metaphor analysis (Phyo et al., 2023a). It provides a comprehensive depiction of the research procedures, the findings of conceptual metaphor analysis, and a thorough discussion of how they complement the results of the quantitative dataset analysis.

Chapter 7 offers detailed insight into participants' responses to the open item investigating the types of support they needed to enhance their EAW abilities (Phyo et al., 2024b). The chapter includes an introduction, the research question, participant information, data analysis process, findings, and a discussion of the results.

Chapter 8 includes three sections that collectively contribute to the overall dissertation. These sections include a synthesis of the analysis results, an examination of the insights and implications stemming from the findings, and an exploration of the research's limitations.

Overall, the dissertation is organized into eight chapters, structured to ensure a coherent and uninterrupted reading experience for readers.

Table 1.1 A short overview of four studies in the dissertation

Study	Research Questions	Data sources	Method
Study 1	1. Which areas of English academic writing do non-native English-speaking (NNES) doctoral students want to be better at? 2. What additional areas do they mention beyond English academic writing?	Open-ended question	Qualitative content analysis
Study 2	1. How do NNES doctoral students perceive their English literacy background at the starting point (ELS) of their PhD journey? 2. How do participants perceive their English academic writing (EAW) abilities? 3. How do they perceive their English academic reading (EAR) abilities? 4. How do they self-assess their knowledge and abilities in research methods in doing their doctoral research tasks? 5. How do participants perceive the quality of feedback received from supervisors, tutors, and peers? 6. How do they assess their abilities to cope with emotions while coping	Large-scale quantitative survey	Quantitative data analyses: descriptive analysis, independent t test, paired samples t test, one-way ANOVA, Pearson correlational analysis, regression analysis

	with English academic writing tasks? 7. How do students perceive their EAW autonomy, EAW competence, and the support they receive from their respective doctoral programs regarding EAW? 8. What are the relationships between participants' initial English literacy background, English academic writing abilities, English academic reading abilities, research knowledge at the start and present, and their ability to cope with emotions, motivational factors, and feedback? 9. How do the students' initial English literacy background, English academic writing abilities at the start of PhD studies, English academic reading abilities, research knowledge at two points in time, (at the start and at the current point), the ability to cope with emotions, motivational factors, and feedback influence their current English academic writing abilities?		
Study 3	What metaphors do doctoral students use to characterize their English academic writing experiences during their PhD studies?	Conceptual metaphor elicitation	Conceptual metaphor analysis
Study 4	What kind of support do NNES doctoral students think could help them the most to achieve their aims in English academic writing?	Open-ended question	Qualitative thematic analysis

CHAPTER 2. LITERATURE REVIEW

This chapter comprises four sections. The first one establishes a theoretical framework that serves as the foundation for understanding the nature of academic writing in English. The second section presents the distinctive characteristics and expectations of doctoral-level academic writing, revealing the interplay between critical engagement with the text, knowledge and abilities in conducting research, and effective scholarly communication. In the third section, the focus shifts to the challenges encountered by novice writers from NNES backgrounds as they navigate the realm of English academic writing (EAW) while fulfilling the requirements of their doctoral programs. The fourth section presents an analysis of the key themes that emerged from the selected studies, shedding light on the experiences and difficulties faced by NNES doctoral students throughout their EAW journey.

2.1. Theoretical framework of English academic writing

English academic writing is a multifaceted form of expression that serves as a cornerstone of scholarly communication across various disciplines (Hyland, 2009; Johns, 2008; Swales, 2019). It embodies distinct features that set it apart from other forms of writing, serving as a vehicle for conveying complex ideas, engaging in intellectual discourse, and contributing to the advancement of knowledge (Hyland, 2009, 2018).

As academic writing must be precise, clear, and evidence-based (Hyland, 2019; Johns, 2008; Swales, 2019), writers strive to articulate their arguments with precision, using precise language to convey their ideas accurately. Clarity is essential, as academic writing aims to communicate complex concepts in a manner that is understandable to a broad audience. Evidence is also crucial, as writers are expected to present their arguments based on evidence and logical reasoning rather than personal bias. Furthermore, EAW adheres to specific conventions and structures that facilitate effective communication (Hyland, 2009, 2016a; Swales & Freak, 2011). These conventions encompass elements such as the use of formal language, adherence to citation and referencing styles, and adherence to disciplinary norms and conventions. These conventions provide a framework for organizing ideas, supporting arguments with evidence, and engaging with existing scholarship (Hyland, 2006, 2014, 2021).

It is important to recognize that EAW is not just a means of conveying information; it is also a genre unto itself (Hyland, 2015; Johns, 2008, 2011; Swales, 2019, 2019). Like other genres, academic writing has its own set of conventions, styles, and expectations that writers must navigate. Understanding these conventions is essential for effectively communicating within academic circles and contributing meaningfully to scholarly discourse.

Moreover, English academic writing is inherently a social interaction (Duff, 2007b, 2010b; Duff & Anderson, 2015). It is not simply a solitary endeavor undertaken by individual scholars; rather, it is part of a larger conversation within the academic community. Through their writing, scholars engage with existing research, respond to the ideas of others, and contribute their own perspectives to ongoing debates (Hyland, 2016b, 2018, 2020). In this

way, academic writing serves as a medium through which scholars interact, collaborate, and build upon each other's work (Hyland, 2004, 2016b)

In conclusion, EAW requires writers to possess a high level of linguistic proficiency in English to uphold standards of precision, clarity, and evidence (Hyland, 2018, 2019; Johns, 2011; Swales & Freak, 2011). Moreover, writers need to have discipline-specific expertise in order to fulfil the expectations of target audience in respective disciplines (Hyland, 2008, 2017, 2018; Johns, 2008; Swales & Freak, 2011).

2.2. English academic writing at the doctoral level

English academic writing (EAW) abilities play a vital role in doctoral education; they serve as a cornerstone for success in the rigorous and demanding journey of pursuing a doctoral degree (Brown, 2014; Murray, 2017; Starfield & Paltridge, 2019). Doctoral programs aim to cultivate scholars and researchers who contribute original knowledge to their respective fields. Proficiency in English academic writing is crucial in this process, as it enables doctoral students to effectively communicate their research findings, engage in scholarly conversations, and produce high-quality dissertations (Odena & Burgess, 2017; Paltridge, 2014; Swales & Freak, 2012).

One of the primary reasons why EAW abilities are vital in doctoral education is the requirement to produce a doctoral dissertation (Cotterall, 2011; Lonka et al., 2019). A doctoral dissertation is an extensive and in-depth research project that demands exceptional writing skills to articulate complex ideas, present empirical evidence, and contribute original insights to the field of study (Paré, 2011). The dissertation serves as the culmination of years of research and study, demonstrating the student's ability to conduct independent research, analyze data, and make a significant scholarly contribution. Effective academic writing allows doctoral students to convey the depth and rigor of their research, ensuring that their findings are communicated clearly and concisely to their academic community (Caffarella & Barnett, 2000; Kamler & Thomson, 2014; Lindsay, 2015; Murray, 2017; Swales & Freak, 2012).

Furthermore, EAW abilities are critical for doctoral students to engage in scholarly discourse. Doctoral education encourages students to immerse themselves in the literature, critically evaluate previous research (Brause, 2012; Wisker, 2015). Through academic writing, doctoral students can contribute to ongoing debates, challenge prevailing theories, and offer fresh perspectives on existing knowledge (Becker, 2008; Belcher, 2019; Glatthorn & Joyner, 2005; Joyner et al., 2018; Paltridge, 2002; Starfield & Paltridge, 2019). By developing their writing abilities, they can engage with their academic community through conference presentations, journal publications, and collaborations, thereby establishing their scholarly reputation and advancing their careers (Hyland, 2004a).

Effective academic writing abilities enable doctoral students to disseminate their research findings to a wider audience (Huang, 2010). Doctoral research often has implications beyond academia, and doctoral graduates may seek opportunities to share their expertise with

policymakers, industry professionals, or the general public. Well-developed EAW skills enable them to communicate their research in a clear, accessible manner, bridging the gap between specialized knowledge and broader societal impact (Hyland, 2009, 2018; Swales, 2004). The ability to convey complex ideas effectively empowers doctoral graduates to make meaningful contributions to their field and promote the application of their research findings in real-world contexts.

Additionally, EAW abilities foster critical thinking and intellectual development in doctoral students. Writing requires students to organize their thoughts, articulate arguments, and engage in reflective analysis. As doctoral students engage with the scholarly literature, they develop their own scholarly voice and learn to critically evaluate existing research, identify research questions, and propose innovative methodologies (Booth et al., 2016). These skills not only contribute to the production of high-quality academic writing but also promote intellectual growth, enabling doctoral students to become independent thinkers and contributors to their fields (Andrews, 2015; Bruce, 2018; Goodman et al., 2020).

Therefore, EAW abilities are fundamental in doctoral education, serving as a cornerstone for success throughout the doctoral journey. The writing of a doctoral dissertation, engaging in scholarly discourse, disseminating research findings in refereed journals, and fostering critical thinking all rely on effective academic writing skills. By mastering EAW, doctoral students can effectively communicate their research, contribute to scholarly conversations, extend the reach of their findings, and enhance their intellectual development. As doctoral education continues to evolve and embrace global perspectives, the cultivation of strong EAW abilities remains essential for doctoral students to thrive as scholars and researchers in their respective fields.

2.3. Challenges novice NNES writers face in EAW during their doctoral studies

Novice writers from NNES backgrounds often face a multitude of challenges that significantly impact their academic performance during their doctoral studies, especially in the realm of academic writing in English. Their limited familiarity with academic English poses considerable obstacles in constructing discipline-specific knowledge and critically engaging with the literature. These challenges become particularly pronounced when students write their doctoral dissertations and submit scholarly papers, as proficiency in academic English is crucial for success in these academic endeavours (Di Bitetti & Ferreras, 2017; Horta & Li, 2023; Horta & Santos, 2016; Lonka et al., 2019; Odena & Burgess, 2017; Pyhältö et al., 2012; Rawat & Meena, 2014).

Academic written communication often poses one of the primary challenges for NNES novice scholars. Their limited academic lexical resources, difficulties with syntactic structures, including academic discourse traditions, and struggles in expressing complex ideas accurately impede effective research dissemination (Hyland, 2016a; Lillis & Curry, 2010; Paltridge, 2014). Scholars such as Hyland (2016a) emphasizes the crucial role of academic English proficiency in effectively conveying research findings and engaging with the

scholarly community. Without a solid foundation in academic English, NNES student-writers face difficulties in articulating their ideas coherently and meeting the respective disciplines' expectations required for doctoral dissertations and academic papers.

Each academic discipline has its own distinct writing conventions, genres, and rhetorical strategies that must be mastered for effective research communication (Flowerdew, 2012; Hyland, 2009, 2020; Johns, 2001; Paltridge & Starfield, 2016; Starfield & Paltridge, 2019). Adaptation to these discipline-specific writing practices can be challenging for non-native English speakers due to their unfamiliarity with the norms prevalent in English-speaking academic communities (Di Bitetti & Ferreras, 2017; Odena & Burgess, 2017). Failure to adhere to these disciplinary expectations and genre-specific writing conventions may result in a lack of clarity or coherence in their writing, making it challenging for their work to be considered publishable or contribute to the scholarly discourse (Hyland, 2018; Paltridge, 2014).

Navigating the complexities of scholarly discourse poses additional obstacles for NNES students (Huang, 2010; Ramírez-Castañeda, 2020). Academic writing demands advanced critical thinking skills, the ability to engage in nuanced argumentation, and the incorporation of evidence from multiple sources (Flowerdew, 2008; Hyland, 2009; Johns, 2008). Developing a scholarly voice and establishing a presence in academic communities through writing are emphasized in multiple studies. Without a strong command of academic English, NNES students may struggle to situate their research within the published literature, adopt appropriate rhetorical strategies, and effectively engage with readers (Di Bitetti & Ferreras, 2017; Flowerdew, 2012; Ren & Hu, 2023). Consequently, their ability to contribute meaningfully to their respective fields may be hindered.

The challenges NNES students with low-level English proficiency must cope with in writing doctoral dissertations and publishing scholarly papers can have significant consequences (Bazerman, 2003; Di Bitetti & Ferreras, 2017; Huang, 2010; Hyland, 2016; Paltridge, 2014). Inadequate language skills and unfamiliarity with disciplinary conventions may result in lower-quality research outputs, limited visibility of their work within the scholarly community, and decreased opportunities for collaboration and recognition (Belcher, 2007; Flowerdew, 2012; Johns, 2008; Leki, 2011; Ramírez-Castañeda, 2020; Swales, 1990). These challenges can also impact their career prospects, as academic writing proficiency is often a crucial requirement for securing employment in academia or at research institutions (Flowerdew, 2012; Na & Nhat Chi Mai, 2017; Ren & Hu, 2023; Solovova et al., 2018) .

It is imperative to acknowledge and address these challenges NNES students face pursuing doctoral degrees. Universities and academic institutions can play a crucial role in providing language support, targeted instruction, and resources tailored to the specific needs of these students (Berry, 2017; Carter, 2011; Cornér et al., 2018; Kasparkova & Rosolova, 2020; Larcombe et al., 2012; Li & Vandermensbrugghe, 2011; Lonka, 2003; Ma, 2019; West et al., 2011). Writing workshops, courses, and individual consultations can offer valuable opportunities for NNES students to enhance their language skills, understand disciplinary

expectations, and refine their scholarly writing. Additionally, fostering a supportive writing community where students can share their work, receive peer feedback, and engage in collaborative learning has proven beneficial for their growth as academic writers (Duff et al., 2019; Eggington, 2015; Gupta et al., 2022; McAlpine, 2020).

In conclusion, NNES students pursuing doctoral degrees often encounter significant challenges in writing their dissertations and publishing scholarly papers due to inadequate proficiency in academic English. These challenges encompass language and communication barriers, unfamiliarity with disciplinary conventions, and difficulties in navigating scholarly discourse. Addressing these challenges through targeted language support, instruction, and fostering a supportive writing community can help mitigate the impact and enhance the academic success of NNES students in their doctoral writing endeavours.

2.4. A critical overview of the selected studies

In this section, I present a systematic literature review to provide valuable insights into the experiences and challenges confronted by NNES novice writers as they navigate academic writing in English during their doctoral studies. The overview is structured into three distinct sub-sections, each serving a specific purpose.

In the first sub-section (2.4.1.), the focus is on search strategies and study selection criteria to establish a methodological framework that ensures the inclusion of relevant studies in the review process. In the second sub-section (2.4.2.), an overview of the selected studies is presented, accompanied by a summary of each study featured in Table 2.1, providing readers with an overview of the research I conducted. Subsequently, in sub-section 2.4.3., a thorough analysis is presented: I examined the overarching themes that arise from the selected studies. This in-depth exploration fosters a deeper understanding of the experiences and challenges encountered by NNES doctoral students during their academic writing journey and it sheds light on the multitude of factors and complexities that influence their engagement with academic writing in English. Finally, in sub-section 2.4.4., the essence of the emergent themes is succinctly summarized and conclusively discussed, bringing together the key insights from the reviewed empirical studies.

The sections that follow provide valuable insights into the experiences and challenges encountered by NNES doctoral students as they strive to attain proficiency in academic writing in English. This section offers readers an understanding of the journey NNES novice writers navigate throughout their doctoral studies, shedding light on the various obstacles and learning experiences they encounter while striving for excellence in their English academic writing skills.

2.4.1. Search strategies and study selection criteria

The review involved an extensive search for relevant articles using various electronic databases such as Web of Science, Scopus, ScienceDirect and JSTOR. To optimize the search process, a range of specific search terms were employed: "academic writing," "academic

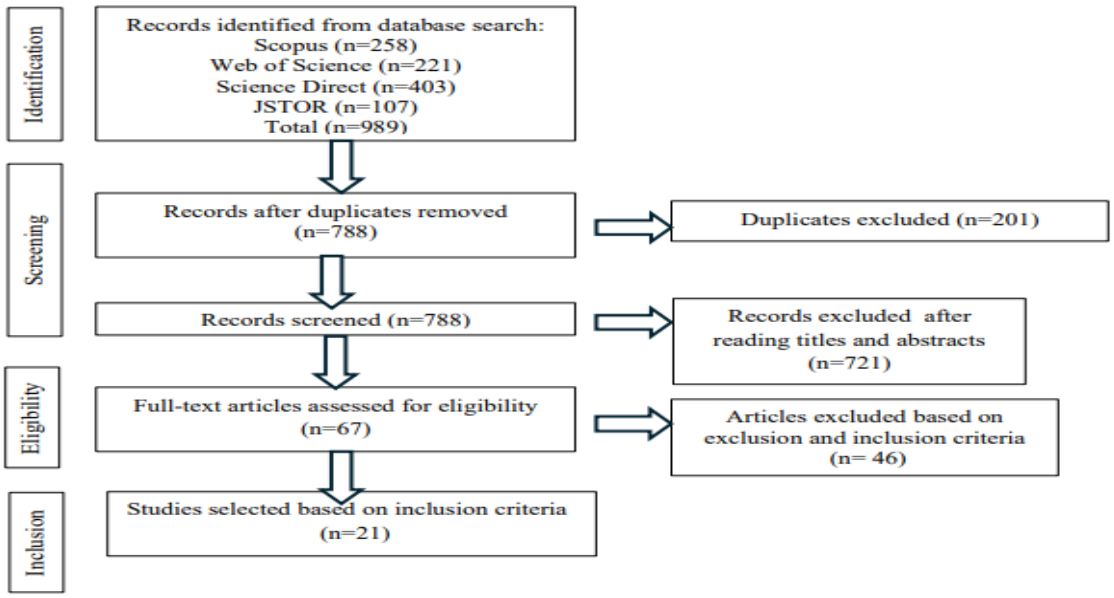
English," "academic writing in English," "English academic writing," "English academic writing for doctoral students," "academic writing for PhD students," "English academic writing for doctoral students," "writing dissertation," "writing doctoral dissertation," "writing academic papers," "journal article writing," "writing research papers," "writing experience of PhD students," "scholarly writing," "writing for publication," "academic writing of postgraduate students," and "academic writing experience of doctoral students."

The initial search provided more than 9,000 references, including academic articles, research papers, books, book chapters, book reviews, conference papers, feature articles, and opinion essays. With such a wealth of materials available, it became imperative to establish a set of inclusion and exclusion criteria to ensure the systematic execution of the review process. The inclusion criteria for literature review were carefully formulated to ensure the selection of relevant and appropriate studies. The first criterion required all selected studies to be empirical in nature, providing a solid foundation of evidence for the review. This criterion ensures that the findings are based on rigorous research methodologies and contribute to the understanding of the English academic writing experiences of NNES doctoral students. The second criterion focused on the context of the studies, specifically emphasizing the use of English in fulfilling doctoral requirements. This criterion recognizes the importance of investigating the unique challenges and dynamics that arise in the context of English-medium PhD education. The third criterion pertained to the language of publication: English. This criterion ensures that the selected studies are accessible and comprehensible to the intended audience, aligning with the focus on EAW. Transparency was emphasized as the fourth criterion, requiring selected studies to explicitly describe their theoretical frameworks, research methodologies (qualitative, quantitative, or mixed methods), data sources, and research findings. This criterion ensures that the selected studies provide clear and detailed information about their research process, enhancing the reliability and validity of their findings. The fifth criterion focused on the participants, stipulating that the selected studies involved NNES students in PhD programs conducted in English or recent NNES PhD graduates who completed their doctoral tasks in English. Academic experts such as thesis advisors, professors, lecturers, and course instructors were also considered valuable participants. Including these participants ensures that the selected studies capture a comprehensive perspective on the English academic writing experiences of NNES doctoral students. The sixth criterion emphasized the data sources, requiring primary data obtained through methods such as interviews, questionnaires, or surveys. This criterion ensures that the selected studies draw from firsthand accounts and experiences and provide rich and nuanced insights into NNES doctoral students' EAW experiences. To ensure the inclusion of recent research findings, only studies published between 2012 and 2021 were considered, as they were assumed to reflect the most up-to-date scholarship in the field.

In addition to the inclusion criteria, a set of seven exclusion criteria were applied during the selection process to refine the focus of the literature review. First, studies that examined English academic writing at the primary and secondary education levels, as well as at the bachelor's degree level, were excluded. Second, studies that focused on EAW for graduate research degrees but included only participants from master's programs, and no doctoral

students, were excluded. Third, studies that mentioned participants as NNES graduate or postgraduate students without explicitly stating whether doctoral students were included were also excluded to ensure transparency in the sample composition. The fourth criterion excluded studies that focused solely on doctoral writing in students' first language (L1), as the focus of the review aimed to include the experience and challenges NNES doctoral students face in English academic writing. Fifth, studies that focused on aspects of English language proficiency other than English academic writing, such as academic presentations or translanguaging in doctoral writing, were excluded. Sixth, studies that did not present all sections of their research in English, despite focusing on the doctoral English writing of NNES students, were not included in the review. Seventh, studies focused on doctoral education, but unrelated to the English academic writing experience of NNES doctoral students, such as those examining political, financial, administrative, career, psychological, or well-being aspects of doctoral education, were excluded to maintain a direct relevance to the research topic. A total of 67 articles were carefully read; however, the studies that were not in line with the inclusion criteria were removed and finally, 21 empirical studies were selected for the present review. The selection process of included studies is presented in Figure 2.1.

Figure 2.1 The selection process of the included studies



2.4.2. An overview of the selected studies

A summary of each of the selected studies is provided below, highlighting four key aspects: (1) Participants and research context, (2) Respective disciplines of the participants, (3) Research methods, and (4) Main findings. As shown in Table 2.1, these studies included a diverse range of total participants, with sample sizes varying from 1 to 90. However, due to the limitations of sample size, these studies did not cover a wide array of research disciplines and universities. It is noteworthy that all these studies specifically targeted NNES doctoral students, who already faced significant workload and time constraints associated with their

doctoral tasks. Considering the demanding nature of doctoral studies, obtaining large sample sizes posed challenges in these studies.

Participation in the studies was voluntary, adhering to ethical standards. While not all selected studies provided explicit information on response rates, Odena and Burgess (2017) and Walter and Stouck (2020) reported low response rates in their research invitations. Odena and Burgess (2017) extended invitations to both local (UK) and international participants, resulting in a sample size of 30. Similarly, Walter and Stouck (2020) reported a response rate of only 10%. These findings show that researchers cannot assume the availability or willingness of all the doctoral students they invite to participate in their studies, considering the significant time commitments and responsibilities that these students already have. Consequently, the sample sizes in the selected studies were limited; they involved NNES doctoral students who voluntarily chose to participate.

Regarding the research methods, the selected studies utilized mixed methods or qualitative approaches, which were considered appropriate for investigating the experiences of NNES doctoral students in academic writing, given the constraints of the available sample size. It is worth noting that the main findings of the 21 empirical studies highlighted the lack of necessary academic writing skills among NNES novice student-researchers at the doctoral level and emphasized their need for academic writing support. Although the studies acknowledged a gradual development of writing abilities in various doctoral tasks, no study compared participants' abilities from the beginning to their current level. Additionally, gender differences in the challenges NNES students had to cope with in their academic writing were not explored, likely due to the limitations posed by the sample size in these studies.

Table 2.1 List of the selected studies

	Author (s)	Participants & contexts	Participants' disciplines	Research method	Main findings
1	Aitchison et al., (2012)	36 PhD students and 28 supervisors in Australia.	science, nursing, engineering, biomedical and math and computing	Mixed method	Doctoral writing is a difficult process for both the students and their supervisors. Writing at the doctoral level is a complex and emotionally demanding process, and it is not an "unimportant by-product of research" (p. 446).
2	Deng (2012)	6 NNES PhD students (2 males, 4 females) of social sciences from mainland China studying in a university of Hong Kong	business communication, communication, Asian studies, and public and social administration	Qualitative	At the start of their PhD journey, the students were completely lacking in academic writing skills in English. However, they became competent writers at a later stage of their PhD studies.
3	Jalongo et al., (2014)	30 PhD students studying in the US, Canada, and Australia respectively. Seven of them did not speak English as their first language	early childhood education, elementary and special education	Qualitative	The serious need of doctoral students to get scholarly writing support was reported. The study reported that at least one writing course should be provided for the students. The need to have writing instruction

					at an early stage of PhD studies and the importance of continuing it throughout the different phases of PhD studies were also emphasized.
4	Huwari & Al-Shboul, (2015)	21male Jordanian students studying at a university of Malaysia	Not specified	Qualitative	The students suffered from negative experiences such as headache, stress, and anxiety as a consequence of not being able to writing in English at the doctoral level.
5	Badenhorst & Xu, (2016)	a Chinese female PhD student and a female expert from Africa and the study took place in Canada	Not specified	Qualitative	The importance of discourse competence, critical engagement, academic writing knowledge and coping with negative emotions in the publication process were identified and discussed.
6	Jomaa & Bidin (2017)	6 PhD male students from the Information Technology department of a Malaysian public university; the students were from Iraq, Libya, Yemen, Syria and Jordan respectively.	Information Technology	Qualitative	The study highlighted the students' inadequate understanding of how to properly cite sources to support their arguments in their dissertations. It also reported that the students were not able to engage with related sources in a critical manner and that they also did not have sufficient knowledge in doctoral writing.
7	Langum & Sullivan, (2017)	6 PhD students (1 male, 5 females). Four students revealed their country (Sweden); but two did not (instead, their countries were mentioned as European countries where English is not spoken as their first language). The participants were studying in Sweden.	linguistics, creative studies, history of ideas, literature, and language teaching and learning	Qualitative	The students struggled with their limitation in vocabulary, grammar, and the rules of formal writing in academic English. Therefore, the study reported the need for writing training for the novice writers so that they could address the demands of publication requirements.
8	Odena & Burgess (2017)	10 PhD students and 20 PhD graduates; 13 of them were from NNES backgrounds. The study took place in the UK.	nursing, health, health psychology, engineering, biology, biochemistry, artificial intelligence, music education, counselling, education, media and communication, criminology, economics, management	Qualitative	Feedback from the instructors benefited the students' writing to a significant extent and the students' dedication to writing progress was also important. Developing the students' ability to write in a discipline-specific manner took time and effort both from the supervisors and the students themselves.

9	Almatarneh et al.(2018)	54 PhD students and 36 master students from Jordan; all were studying in Malaysia.82 students were male, and 8 were female.	Not specified.	Qualitative	The students' writing was negatively impacted by a lack of vocabulary, difficulties in expressing ideas, organizing sentences, and creating paragraphs, challenges in paraphrasing, an inability to construct critical discussions and ideas, errors in grammar and spelling, weak referencing skills, and difficulty in locating relevant articles and journals for their literature review.
10	Chatterjee-Padmanabhan & Nielsen, (2018)	2 female PhD students studying (one came from a middle Eastern country and one from Asia) in Australia.	Not specified but both were academics at a university of respective home countries.	Qualitative	Students' limitations both in English academic writing and in research knowledge were reported. The importance of receiving writing support was highlighted.
11	González-Ocampo & Castelló (2018)	61 doctoral supervisors (25 males, 36 females) of social sciences and humanities from Spanish universities	education. philosophy, psychology, and sociology	Qualitative	Findings revealed that the supervisors were aware of both the importance of academic writing and the students' lack of skill in it, indicating the need to support students' writing.
12	Jafari et al. (2018)	15 Iranian students (7 males and 8 females) studying in Iran.	engineering, biotechnology, and math.	Qualitative	The students expressed that they needed academic writing course that was designed for the doctoral level as the EAP/ESP courses they previously received did not help them much in writing articles in English.
13	Lei & Hu (2019)	6 PhD students, one supervisor from the nursing department of a university in mainland China	nursing	Qualitative	The participants reported that the frustration they encountered while trying to write up publishable papers was beyond words. Their limited knowledge in scholarly writing and research knowledge were identified as underlying factors.
14	Ma (2019)	27 doctoral students studying in Australia. They were all NNES students, representing 11 home languages.	science, human sciences, arts, business and economics	Qualitative	Participants faced linguistic challenges when it came to writing academic texts in English (grammar, vocabulary, sentence structure, and overall language proficiency). They also encountered emotional challenges while engaging in academic writing. The students expressed a clear need for support and assistance to

					enhance their writing skills.
15	Rezaei & Seyri (2019)	9 Iranian students (5 male and 4 females) studying in Iran.	chemistry, physics, nanotechnology, and electronics.	Qualitative	Due to scholarly writing incompetence, the students faced challenges and they depended on their supervisors and peers to improve their manuscripts before final submission. The important role of staying motivated was also reported.
16	Xu & Zhang (2019)	Two Chinese PhD students studying in New Zealand. They both specialized in the field of education.	education (Sociology of Sport), education (Applied Linguistics and Education):	Qualitative	Even though the students had to go through a demanding process of academic writing, they recognized that their epistemological knowledge was improved while interacting with experts.
17	Bachiri & Oifaa (2020)	21 Moroccan PhD students (13 males and 8 females) studying at the Euromed University of Fes, Morocco.	Engineering	Mixed methods	Publication is a requirement for the PhD students to graduate; however, their real ability to write publishable papers for indexed journal badly needed further training.
18	Jeyaraj (2020)	6 NNES students from China, Nigeria, Malaysia studying in Malaysia	Not specified	Qualitative	Students expressed that they had never had any academic English writing instruction. The importance of receiving constructive feedback from peers and supervisors was highlighted.
19	Walter & Stouck, (2020)	7 PhD students studying in Canada; three of them were NNES students	social science, applied science	Mixed methods	Students were not experienced in managing a large amount of information which led them to fail in integrating what they had read into their writing. They often had to seek help from supervisors and writing center while dealing with academic writing due to their insufficient knowledge in genres, conventions, and language proficiency.
20	Lin & Morrison (2021)	77 PhD students, 5 MPhil students (56 males and 26 females) and 24 faculty members (21 males and 3 females) from three universities of Hong Kong.	Engineering	Mixed method	The primary concern of most NNES graduate students was challenges at the sentence level, whereas that of most faculty was challenges at the discourse level (i.e., global language features).

21	Wang & Parr (2021)	one Chinese female PhD student studying in Australia		Qualitative	The study found that the NNES student with limited academic writing exposure went through a difficult journey which demanded scholarly texts at the academic quality. The writing ability of the student was also hugely influenced by their own linguistic knowledge and their writing practice in L1.

2.4.3. Themes that emerged from the selected studies

The selected studies offer a comprehensive examination of the academic writing journey NNES students undergo. They describe various facets of this journey, spotlighting the challenges encountered by NNES doctoral students grappling with their limited proficiency in academic writing in English. Through a thorough review and synthesis of the literature, guided by established methodologies in qualitative research such as thematic analysis (Braun & Clarke, 2006), twelve distinct recurring themes have been identified. These themes emerged from an iterative process of data analysis, wherein patterns, similarities, and connections across the studies were systematically identified and categorized. By drawing on principles of content analysis (Krippendorff, 2018) and grounded theory (Charmaz, 2006), the narratives and experiences shared by NNES doctoral students were thoroughly examined, leading to the identification and refinement of these recurring themes. This analytical approach allowed for a nuanced understanding of the common challenges throughout their academic writing journeys. All the emerging themes are presented below.

The first theme revolves around vocabulary, highlighting the significance of having a robust lexical resource in English to effectively tackle doctoral writing tasks. The second theme emphasizes the role of grammar as well as the importance of syntax, part of grammar. The third theme points out why critical thinking is an essential requirement for doctoral writing; most studies indicate students' need to develop critical thinking skills in order to excel in writing. The fourth theme focuses on the important role of ability to paraphrase academic texts without distorting original meaning. The fifth theme addresses the ability to present ideas coherently across texts, encompassing paragraph and text-level coherence, as well as integrating findings of the previous literature seamlessly into their writing. The sixth theme highlights the importance of writing a critical review of literature; the studies reveal that many students lacked familiarity with conducting literature reviews for their doctoral writing. The seventh theme focuses on research knowledge: findings emphasize that sound knowledge of one's chosen research area and research procedures is indispensable for academic writing at the doctoral level. The eighth theme concerns the role of English academic reading; the selected studies collectively indicate that reading to write is a common and helpful practice among most doctoral students, compensating for their lack of academic writing skills. The ninth theme focuses the significance of constructive feedback: students expressed a strong desire for timely feedback to improve their texts. The tenth theme pertains to the students' need for academic writing support; although not explicitly stated in all the studies, the findings suggest that students lacked formal training in academic writing in English. The

eleventh theme highlights the fact that EAW at the doctoral level involves emotional work for novice NNES writers with limited EAW experience. The twelfth theme highlights the fact that students need to feel a sense of competence, autonomy and being supported by their respective academic communities to stay motivated along their PhD journey. Each of these 12 themes are discussed in detail in sections 2.4.3.1. to 2.4.3.12. Furthermore, an additional noteworthy finding, unrelated to the EAW construct, is presented in section 2.4.3.13.

2.4.3.1. Vocabulary

The selected studies revealed the significant challenges that NNES doctoral students face when it comes to their knowledge of academic vocabulary in English. These challenges, in turn, give rise to a range of problems stemming from vocabulary limitations.

Aitchison et al. (2012) emphasizes the crucial role of supervisors in editing the vocabulary choices made by doctoral students. This suggests that even with concerted efforts, students may still struggle to use appropriate words and phrases in their academic writing, requiring additional guidance and support. Shedding further light on the complexity of the issue, Badenhorst and Xu's research (2016) highlights the time-consuming nature of the struggles faced by NNES doctoral students concerning vocabulary. The participant in this research expressed that a significant amount of time and effort was required to ensure the usage of suitable words and phrases. This insight underscores the extensive dedication and perseverance needed to overcome vocabulary limitations effectively.

The findings of Jomaa and Bidin (2017) also bring attention to the detrimental effects of lacking academic English vocabulary and discipline-specific terms on the quality of arguments developed by students. The study reveals that students' attempts to paraphrase sentences and avoid plagiarism penalties can often lead to distorted meanings due to awkward language use and the use of unfamiliar terms that deviate from the expected academic discourse. Moreover, Jomaa and Bidin (2017) highlight the students' inability to effectively demonstrate critical thinking skills due to the lack of evaluative vocabulary, even when utilizing citations to support their ideas.

In addition to these findings, the study of Langum and Sullivan (2017) also provides further evidence of how limited academic lexical knowledge in English hinders progress in academic writing. The study corroborates the notion that inadequate vocabulary negatively impacts students' ability to produce high-quality written work. Similarly, Almatarneh et al. (2018) support these conclusions by stating that "problems such as lack of vocabulary, repetition of words, incorrect usage of words, avoiding complex and complicated words were the major issues related to words in academic writing" (p.252). The study further highlights that students often resort to simplistic words, resulting in a significant decline in the quality of their academic texts.

The studies conducted by Bachiri and Oifaa (2020), Jafari et al. (2018), Jeyaraj (2020), Rezaei and Seyri (2019), and Wang and Parr (2021) all reinforce the prevailing issue of

vocabulary challenges faced by NNES doctoral students. These studies shed light on the difficulties these students encounter, not only in acquiring academic English vocabulary but also in understanding discipline-specific terms that are unique to their respective fields of study.

The study conducted by Lin and Morrison (2021) provides valuable insights into the nuanced nature of vocabulary usage. The researchers interviewed student participants, and one of them mentioned that their words and phrases were often not easily understood by readers. This highlights the difficulty of effectively conveying meaning through vocabulary choices. In addition, another participant in the study described the difficulty they faced in selecting the most appropriate words while avoiding repetition. They acknowledged that there are subtle differences between words that make this task far from easy. This finding underscores the importance of not only expanding one's vocabulary but also developing a deep understanding of the nuances and shades of meaning that different words can convey.

The cumulative findings from these studies substantiate a consistent pattern: NNES doctoral students confront significant vocabulary challenges that have far-reaching implications. Research conducted by Nation (2001) highlights the critical role of vocabulary knowledge in academic language proficiency and its impact on various language skills, including reading comprehension and writing. Similarly, Laufer and Hulstijn (2001) emphasize the close relationship between vocabulary size and overall language competence, reflecting the crucial role of vocabulary knowledge in academic success and they highlight the need for targeted vocabulary instruction for NNES students. Moreover, the works of Hyland, Swales, and Johns have provided valuable insights into the challenges NNES students face in using and developing academic vocabulary and the importance of vocabulary learning for academic writing (Hyland, 2016b; Johns, 2011; Swales & Freak, 2012) . It is evident that academic lexical resources play a crucial role in NNES novice students' academic writing.

2.4.3.2. Grammar

The role of grammatical competency is another theme that emerged from the studies, highlighting the fact that NNES doctoral students often lack knowledge of grammar rules in their writing. Aitchison et al. (2012) revealed that their participants' grammar skills were not yet at the desired level for doctoral writing. This indicates that NNES doctoral students may find grammar rules difficult to apply in their academic writing, which can have implications for the clarity and effectiveness of their communication. The participants in the study conducted by Huwari and Al-Shboul (2015) also expressed making numerous grammatical mistakes, leading to high levels of writing anxiety. This outcome pinpoints the significant impact that weak grammatical knowledge can have on NNES doctoral students' overall writing experience, potentially affecting their confidence and ability to effectively convey their ideas.

In addition, other studies, including Jomaa and Bidin (2017), González-Ocampo and Castelló (2018), Jeyaraj (2020), Lin and Morrison (2021), and Wang and Parr (2021), also reported

instances of incorrect grammatical structures and punctuation errors in NNES doctoral students' texts. These findings indicate a recurring issue with grammatical accuracy among this group and suggest that grammatical competence is often an issue for NNES doctoral students.

The importance of developing accuracy in grammar for doctoral writing is also emphasized in studies conducted by Bachiri and Oifaa (2020), Ma (2019), Odena and Burgess (2017), and Rezaei and Seyri (2019). These authors also highlight the significance of addressing grammatical problems to enhance the quality and effectiveness of students' academic writing. Almatarneh et al. (2018) also identified erroneous grammar in NNES doctoral students' output, underscoring the need for improvement in this area. This further emphasizes the importance of developing explicit grammatical knowledge and skills among NNES doctoral students to enhance their overall writing competence.

Jafari et al. (2018) specifically reported limited knowledge of grammar of NNES doctoral students, including issues related to "use of correct voice, especially passive, tenses, articles, prepositions, nouns and adjectives, choice of common verbs as well" (p. 1254). This long list of basic grammar problems indicates that NNES doctoral students often lack knowledge of various aspects of grammar; thus, targeted interventions and support may be necessary to address these specific areas of difficulty in addition to more complex rules. Furthermore, Lei and Hu (2019) mentioned that reviewers often point out grammatical problems in manuscripts written by NNES students. This highlights the practical implications of poor grammar skills, as they may negatively impact the reception and evaluation of students' research work.

In summary, the selected studies collectively highlight many issues in NNES doctoral students' grammatical competence and the need to improve their grammatical knowledge and accuracy to become autonomous and proficient writers. Scholars such as Bitchener and Ferris (2012) also emphasized the importance of grammar in second language writing and the significant role it plays in achieving proficiency. Furthermore, Hinkel (2015) underlined the impact of grammar on the clarity and coherence of written texts. These findings in empirical studies underscore the necessity for NNES doctoral students to prioritize the enhancement of their grammatical skills to effectively convey their ideas and enhance their scholarly writing abilities.

2.4.3.2.1. Syntax

The selected studies also reveal problems in terms of syntactic knowledge and writing well-structured sentences. In the study conducted by Aitchison et al. (2012), a supervisor mentioned the need to fix every sentence in the students' texts. A student even experienced emotional distress in a meeting when their supervisor pointed out sentences that were not well-structured: "At one meeting I burst into tears and cried for two hours while [my supervisor] went through and said, 'That's not a sentence. That's not a sentence'..." (p.442).

Huwari and Al-Shboul (2015) found that NNES students found varied sentence patterns difficult in English. Badenhorst and Xu (2016) reported that an NNES student highlighted the challenge of ensuring every sentence to be structured appropriately, which significantly slowed down her writing process and diverted her attention from generating ideas. Jomaa and Bidin (2017) identified their students' issues with writing academic English sentences accurately, as they tried to write long and complex sentences in English. Odena and Burgess (2017) documented how an NNES student tried to write accurate sentences. These examples highlight the difficulties students faced in conveying their intended messages effectively.

Almatarneh et al. (2018) and González-Ocampo and Castelló (2018) also identified sentence-level issues in NNES doctoral students' texts in their respective studies. Additionally, Jafari et al. (2018) found that participants had difficulties producing and comprehending long and complex sentences in academic research articles: "One of the participants described the problem in this way: When I want to write, I know each and every word of my sentence, but the problem is that I cannot make a correct sentence" (p.1254). The students depended on simpler and shorter sentences while writing, indicating insufficient knowledge of sentence structures. One of them expressed that their lexical knowledge could not help them much in sentence construction: "We know most of the words, but our problem is that we don't know how to connect them and make a good and correct sentence" (p. 1254).

Ma (2019) discussed NNES students' experiences who expressed the need for their sentences to be checked for adequacy and academic acceptability, despite their best efforts. They also mentioned limitations in their syntactic knowledge, which hindered their ability to express themselves. Bachiri and Oifaa (2020) highlighted that NNES doctoral students tended to make various mistakes when attempting to produce long and complex sentences. As a result, only shorter sentences were deemed grammatically correct. Lin and Morrison (2021) reported that NNES students had issues with sentence comprehension and faced challenges in linking sentences smoothly, causing difficulties for readers to understand their intended meaning. Wang and Parr (2021) found that students in their study lacked a good command of syntactic knowledge, particularly when sentence structures became complex. They also faced difficulties with understanding and using complex clauses in English.

The above findings in these studies illustrate the challenges NNES doctoral students face in terms of sentence construction, applying their syntactic knowledge accurately in varied sentence structures. Scholars have emphasized the importance of understanding the structure, organization, and arrangement of words, phrases, and clauses in English sentences to ensure clear and precise communication of ideas (Biber et al., 2002; Hyland, 2014). By developing syntactic knowledge, NNES scholars can effectively convey their thoughts in a coherent and unambiguous manner, facilitating the understanding of their ideas by their readers. Furthermore, syntactic competence contributes to the logical flow and coherence of the written text, allowing for a smooth progression of ideas and enhancing the overall quality of the scholarly work (Hinkel, 2016). As Hyland (2018) noted, strong syntactic skills contribute to the perception of the author's expertise and scholarly competence, which is vital in establishing credibility in academic writing. Therefore, it is essential for NNES novice

scholars to prioritize the development of English academic syntactic knowledge as they strive to produce high-quality academic papers, scholarly articles, and dissertations.

2.4.3.3. Critical thinking

The studies also provide compelling evidence for the importance of critical competence in doctoral writing: they emphasize the need for both English language proficiency, including linguistic competence, and critical reasoning abilities. Deng (2012) discussed the significance of a critical approach in developing students' academic identity during the dissertation writing process. Badenhorst and Xu (2016) emphasized the requirement for an in-depth demonstration of critical engagement in research paper writing, following internationally acceptable standards for publication.

Jomaa and Bidin (2017) reported that NNES students' discussions often focused on reporting facts rather than critically discussing or evaluating research, suggesting a gap in their critical thinking skills. Odena and Burgess (2017) discussed a recurring phenomenon: NNES students who were not taught to write academic texts critically faced difficulty in expressing a strong critical voice, which is essential in doctoral tasks. They underscored the need to develop critical thinking skills in NNES doctoral students, including providing feedback that supports them in cultivating critical writing abilities.

Almatarneh et al. (2018) found that NNES novice scholars often lacked the ability to discuss ideas from a critical perspective, indicating a need for improvement in this area. Chatterjee-Padmanabhan and Nielsen (2018) highlighted the importance of NNES students enhancing their ability to demonstrate critical engagement with the literature before transitioning into a contributing role as researchers. Xu and Zhang (2019) emphasized that achieving a certain degree of criticality in NNES students' doctoral writing in English requires sufficient experience in academic writing and the research field. They highlighted the importance of students being able to critically evaluate existing research and interpret their own research works.

The findings of the selected studies presented in this section provide strong evidence for the crucial role of critical engagement in doctoral level academic writing tasks. The authors of the studies recognize the significance of critical thinking in academic writing. Hyland (2016) emphasizes the importance of developing students' critical thinking skills to enable them to engage with research materials critically and to express their own perspectives. Criticality is an essential aspect of academic writing as it allows students to engage in independent and evaluative thinking (Hyland, 2016a). Additionally, the organization and coherence of academic writing are vital, as means of logical argumentation and appropriate use of cohesive devices (Hyland, 2008; MacArthur et al., 2008). Effective organization and coherence significantly contribute to the clarity and persuasiveness of academic writing.

Moreover, learning knowledge about research and the development of research skills are essential aspects of academic writing, underscoring the importance of understanding research methodologies and conventions (Aitchison & Lee, 2006; Hyland, 2004a, 2016a). It is crucial

for students to develop research literacy to engage in academic writing at the doctoral level. Therefore, the literature I overviewed strongly supports the significance of demonstrating critical analysis and evaluation of previous research conducted on the chosen research topic, as discussed in the selected studies.

2.4.3.4. Paraphrasing

The studies also highlight that paraphrasing necessitates both the ability to summarize academic sources and draw conclusions, which can be particularly daunting for inexperienced researchers. Additionally, to avoid altering the original meaning and inadvertently presenting mere factual restatements, students require a robust academic vocabulary and strong grammatical skills.

In the study conducted by Huwari and Al-Shboul (2015), participants expressed their inability to paraphrase without distorting the original message. One student specifically mentioned feeling overwhelmed when attempting to rephrase a paragraph, as they struggled to convey the intended meaning effectively. They described experiencing physical pain and discouragement about their paraphrased work as follows: "I feel headache when I want try to paraphrase the paragraph that I want to rephrase because sometime I feel that I can't convey the meaning that I suppose to convey. So, I feel headache, sometimes disappointing of what I have written" (p. 28).

Similarly, in the study by Jomaa and Bidin (2017), another student mentioned encountering the same problem. They described how, despite having a clear point, they would realize that their written work differed from the original concept upon rereading it: "You have the idea in your mind, but when you reread what you have written, you find that the idea is different from the original one" (p.198). This indicates a challenge in accurately capturing and conveying the intended meaning through paraphrasing.

Other studies, including Almatarneh et al. (2018), Lei and Hu (2019), Lin and Morrison (2021), and Walter and Stouck (2020), also highlight issues related to paraphrasing. These studies provide evidence that NNES students often lack the necessary skills to paraphrase passages. Their findings indicate that a strong command of lexical resources and grammar plays a crucial role in effective paraphrasing, as those who lack these encounter more significant difficulties in this area. It is important to note that the ability to summarize and draw conclusions is also fundamental to successful paraphrasing. By paraphrasing effectively, students can showcase their deep understanding of the source material while presenting ideas in their own words. Thus, these studies clearly demonstrate the interdependence of paraphrasing, summarizing, drawing conclusions, academic lexical knowledge, and grammar in doctoral writing, and they highlight the need for NNES students to develop these skills to enhance their overall EAW proficiency.

In line with the findings of these selected studies, the challenges encountered by novice writers in paraphrasing are also documented in the literature. As paraphrasing serves as a demonstration of the writer's comprehension and ability to express ideas in their own words

while maintaining the original meaning, Na and Nhat Chi Mai (2017) highlighted that limited vocabulary and unfamiliarity with collocations and academic terminology can make it difficult for students to accurately rephrase original texts. These obstacles impede their ability to convey their intended meaning effectively. Cultural and disciplinary differences further complicate the paraphrasing process. According to Keck (2006, 2014), variations in rhetorical conventions and discourse patterns across cultures influence how NNES students interpret and rephrase source materials. Additionally, discipline-specific writing norms and expectations add another layer of complexity, necessitating students' navigation of discipline-specific conventions. Grammatical accuracy and appropriate sentence structures also present challenges in paraphrasing. Hirvela and Du (2013) note that inadequate knowledge of English grammar rules and sentence patterns can lead to errors, resulting in a loss of coherence and clarity. The task involves reformulating complex sentence structures while maintaining syntactic coherence and avoiding plagiarism.

The avoidance of unintentional plagiarism is a major concern for NNES students. Pecorari and Petrić (2014) emphasize that the fear of plagiarism undermines students' confidence in paraphrasing effectively. Striking a balance between expressing original ideas in one's own words and appropriately acknowledging sources requires a deep understanding of academic integrity principles.

In conclusion, the selected studies reveal the difficulties NNES doctoral students must cope with when they paraphrase their sources, as it requires a deep understanding of source materials and the ability to present ideas in one's own words (Shi, 2012). Therefore, novice authors need support and guidance in developing their paraphrasing skills to enhance their overall writing proficiency.

2.4.3.5. Coherence and cohesion

The key findings of the selected studies shed light on the considerable challenges students face when they try to express their ideas in a coherent manner and establish seamless connections within and between paragraphs. These challenges primarily stem from low level of proficiency in the target language, English. In the context of doctoral writing, where all statements must be substantiated by research-based evidence, novice scholars often fail to establish meaningful connections among ideas and paragraphs. Additionally, forming cohesive links between their ideas and existing literature poses an additional challenge.

According to Aitchison et al. (2012), creating a coherent text is often hard for NNES students. Supervisors in the overviewed studies highlighted the students' inability to write clear and cohesive paragraphs, necessitating complete paragraph rewrites in some cases. Huwari and Al-Shboul (2015) reported problems in expressing one's own ideas, citing a participant’s words, "I feel my writing does not reach what I want to say." Badenhorst and Xu (2016) found that their participants sometimes had to abandon their ideas due to a limited linguistic repertoire, “I wish I could be a native English speaker so that I could express ideas freely” (p. 8). Their study emphasized that coherence and logical train of thoughts in writing

pose challenges for NNES novice writers. The findings of Almatarneh et al. (2018) emphasize the challenges students encountered in expressing ideas effectively and organizing them in a logical manner. The researchers observed a lack of coherence in the construction of paragraphs throughout the students' texts, indicating difficulties in maintaining a consistent flow of ideas. Furthermore, the study revealed that students were not fully acquainted with the academic conventions and norms pertaining to the proper use of citation and referencing. This lack of awareness regarding appropriate citation practices can further hinder the coherence and credibility of their written work, as reported by (Jomaa & Bidin, 2017).

Chatterjee-Padmanabhan and Nielsen's (2018) study also revealed problems in connecting ideas and establishing appropriate links in their participants' texts. One of their participants said, 'You read a lot and you think that you know a lot, but those things are scattered in your mind; you don't have any link between them' (p. 9). This difficulty in creating cohesive connections was consistently reported in the studies conducted by González-Ocampo and Castelló (2018) as well as by Sullivan (2017) on the lack of textual coherence in the academic writing. In González-Ocampo and Castelló's study, a supervisor emphasized the significance of maintaining consistent presentation styles throughout texts to enhance their coherent quality. They stressed the importance of adhering to specific citation rules consistently, stating, "I stress to the students they should care about following the citation guidelines that we are using" (p. 395). These findings emphasize the need for students to maintain coherence not only in their ideas but also in their citation and referencing practices.

Lei and Hu (2019) pointed to the need for intensive editing not only in terms of accuracy but also in paragraph structure in NNES doctoral students' texts, addressing the inclusion of irrelevant information that does not support the main topic. Ma (2019) identified developing ideas and effectively linking them as problematic areas for NNES novice writers. The study emphasized the importance of experienced scholars checking for clarity and logical connections among ideas. Bachiri and Oifaa (2020) emphasized the requirement for enhanced cohesion in students' texts. Specifically, they highlighted the significance of addressing grammatical errors in constructing long and complex sentences. This finding suggests that grammatical mistakes can hinder the overall coherence of the students' texts.

Additionally, Bachiri and Oifaa (2020) underscored the importance of possessing sufficient knowledge to adhere to the preferred citation and referencing formats of the intended readers. This indicates that NNES doctoral students need to focus not only on improving their grammatical accuracy, but they also need to be knowledgeable about the appropriate citation and referencing practices in academic writing. Jeyaraj (2020) also revealed that formulating well-structured paragraphs in English was a challenge for NNES students due to a lack of prior formal training in this area. The study by Lin and Morrison (2021) exposed the serious difficulties novice scholars had in expressing ideas, developing arguments, and organizing their thoughts logically and clearly in academic English. Participants claimed that their main problem was to express their own ideas in academic texts and supervisors noted a tendency to present ideas in a less concise manner. Insufficient ability to organize academic texts, including coherence, clarity, and logicality throughout the text, was identified as a significant

shortcoming in NNES students' doctoral writing in the overviewed studies. Moreover, in Wang and Parr's study (2021), an NNES student pointed out the challenge of expressing ideas in English and the perceived barrier between themselves and "real English," limiting their ability to convey ideas logically: "I still have to shrink my ideas to 50 per cent of the original .... There is a glass wall between real English and me. Although English seems to be so close to me, I can never access the real English ..." (p. 6).

Overall, these empirical studies provide evidence of the immense challenges NNES students encounter in effectively communicating their ideas and arguments in English academic texts. Achieving coherence, both within paragraphs and across the entire text, tends to be a major difficulty for NNES novice writers. The integration of ideas and arguments in research-based academic writing can be particularly demanding, leading to difficulties in maintaining a consistent flow of information and logical progression (Hyland, 2014; Paltridge, 2004).

Additionally, the systematic use of citation and consistent citation styles plays a crucial role in enhancing the overall coherence and scholarly credibility of NNES students' work. Navigating the complexities of accurately citing sources and adhering to specific citation conventions is essential for all writers (Hyland, 2019; Leki, 2011). By incorporating appropriate citations throughout their texts, NNES students not only lend credibility and rigor to their work but also enable readers to trace the origins of ideas and engage with the broader academic discourse (Swales & Freak, 2012). Therefore, providing support and guidance to novice writers is crucial in developing the skills necessary for presenting ideas coherently and incorporating citations effectively in their academic texts.

2.4.3.6. Writing a literature review

Another prominent theme that emerged from the studies is the lack of awareness among novice scholars regarding how to conduct a literature review effectively. The problem becomes even more significant for NNES students who may not be familiar with the academic writing conventions of English. Almatarneh et al. (2018) reported that NNES students had issues with writing a critical literature review due to their limited understanding of how to find the relevant literature and critically review it. The study conducted by Jeyaraj (2020) found that NNES students lacked knowledge about the structure of a literature review. They expressed uncertainty whether their literature review was appropriately focused and found it difficult to determine what to include or exclude: "I don't know if my literature review is too broad or too narrow so... or what kind of sub-topics that I should include" (p. 13). Walter and Stouck (2020) also observed that students were not aware of the academic purposes of literature review sections and had difficulty retrieving the necessary academic sources. Moreover, despite intensive reading, students failed to summarize the key points critically and integrate the information they had gathered into their literature reviews. The process of literature review was described as extremely hard by a participating student in (Wang & Parr, 2021). The constant back-and-forth review of their writing was both helpful and mentally taxing, "Keeping reviewing my writing back and forth helped, but it was also a kind of torture (p. 7).

Based on the findings of the studies, it is evident that NNES novice writers face challenges in writing a literature review of academic research, as it demands the writer to demonstrate an in-depth level of critical evaluation and synthesis of the literature coming up to expected academic standards. Literature has also identified the reasons why writing a literature review poses challenges for novice NNES writers. Limited English proficiency can hinder their comprehension of intricate concepts, making it difficult to summarize and synthesize literature effectively. Furthermore, unfamiliarity with academic vocabulary and disciplinary terminology adds to the complexity of writing literature reviews. Cultural variations in rhetorical styles, organizational structures, and citation practices across cultures further complicate the synthesis and integration of sources (Hyland, 2014; Paltridge, 2004; Silva & Matsuda, 2012). Moreover, NNES students must cope with information overload, as the vast amount of available literature can make it challenging to identify the most relevant sources (Ali et al., 2022) the key points in them. Limited time and resources intensify this difficulty, impeding their ability to navigate databases and evaluate sources critically. Integrating multiple perspectives and creating a coherent narrative in the literature review also presents a challenge, requiring higher-order thinking skills and a deep understanding of the topic (Fan et al., 2022; Lim et al., 2022; Randolph, 2019). Therefore, addressing these challenges through targeted support and guidance can help NNES students develop their literature review writing skills effectively.

2.4.3.7. Conducting research

The selected studies clearly emphasize the importance of developing academic writing skills and research skills simultaneously, as doctoral dissertations are expected to make significant contributions to their respective academic communities. In their study, Badenhorst and Xu (2016) reported that novice research students need to develop research competence, which includes acquiring knowledge about their research topics and formulating research questions, in order to produce high-quality research papers. Odena and Burgess (2017) also highlight the significance of research-related experience in doctoral writing. Jomaa and Bidin (2017) also found that a low level of knowledge in the research area negatively impacts students' ability to write at the expected academic level.

Lei and Hu (2019) found that students must equip themselves with various research skills, such as knowledge about their chosen research topic, research design and methodology, data collection, and data analysis. Participants in their study also mentioned the importance of carefully selecting research topics, as they aspire to have their research papers published in internationally reputable academic journals. Similar findings were reported by Bachiri and Oifaa (2020), González-Ocampo and Badia (2019), and Xu and Zhang (2019). Furthermore, Bachiri and Oifaa (2020) pointed specifically to the role of research knowledge in doctoral writing; the students “find themselves torn between the appropriate use of research methods and writing efficiency (p. 14)”.

Therefore, these studies highlight the integral role of research knowledge in the academic writing of doctoral tasks. It is important to note that knowledge of research areas and methodology cannot be developed separately from writing, as research procedures are often taken into consideration when manuscripts are submitted. By considering the interdependence of research methodology and writing, doctoral students can effectively enhance both their research and writing abilities, leading to high-quality contributions to their academic fields (Lambie & Vaccaro, 2011; Murakami et al., 2011). These findings align with the insights provided by scholars in the published literature. According to MacArthur et al. (2008), having a solid foundation of research knowledge empowers writers to effectively position their work within the existing scholarly landscape. This knowledge enables them to identify gaps in current knowledge, contribute novel insights, and engage in meaningful academic conversations. Additionally, Glatthorn and Joyner (2005) emphasize that knowledge of research equips writers with the ability to evaluate the credibility and relevance of the sources they read, which is crucial for constructing well-supported arguments.

Furthermore, research knowledge plays a pivotal role in the development of critical thinking skills in academic writing. As Hyland (2016b) noted, actively engaging with research literature encourages writers to analyze, interpret, and synthesize information, thereby enhancing their capacity for critical thinking and the evaluation of different perspectives. This heightened critical thinking ability enhances the overall quality and depth of their academic writing significantly. Moreover, research knowledge empowers writers to make evidence-based claims and support their arguments with credible sources. As underscored by Hyland (2016a) and Swales and Freak (2012), a solid understanding of existing research allows writers to integrate relevant evidence, cite authoritative sources, and maintain academic integrity. By doing so, writers strengthen the credibility of their work while actively contributing to scholarly conversations in a meaningful and impactful way.

In summary, the studies I overviewed reinforce the crucial role of research knowledge in academic writing. A strong research foundation empowers writers to situate their work effectively, think critically, and make evidence-based claims, ultimately contributing to the production of high-quality academic texts.

2.4.3.8. English academic reading comprehension

The selected studies provide compelling evidence of the significance of academic reading in writing quality texts. They demonstrate that reading plays a crucial role in various aspects of the writing process, from producing publishable manuscripts to understanding the trends and requirements of academic journals. Badenhorst and Xu (2016) highlight the initial step of reading in creating acceptable manuscripts and gaining insights into the targeted academic journals. They also emphasize the importance of reading in revising the already written texts to make it strengthened and to make the gaps filled – a student clearly stated this as follows: “In the revision phase, I’ll do more reading, following up on sources. I’ll strengthen the narrative, the story of the paper. I’ll fill in gaps and provide thick description where it is needed” (p. 10).

Odena and Burgess (2017) further emphasize the value of reading as a key strategy for NNES students in improving their writing. Reading allows students to familiarize themselves with discipline-specific expressions used by scholars in their fields, learn grammar and vocabulary, generate ideas, and notice structures. It was found that doctoral students in this study regarded reading as a key to improving writing: “without input we can’t output” (p. 583).

Jomaa and Bidin (2017) reveal the dangers associated with insufficient reading and lack of depth, which can hinder students’ ability to evaluate the information they gather and write effectively. Students acknowledged that their reading improved their writing; for example, a student said, “Frankly, my writing was enhanced through reading continuously” (p. 196). The study highlights the positive impact of reading on students' EAW abilities.

Chatterjee-Padmanabhan and Nielsen (2018) report the challenges students faced in EAR; “Having read in other languages, international doctoral scholars using English as an additional language (EAL) may only be beginning to gain a sense of the disciplinary conversations in their chosen discipline area in English” (p. 9). A participant in this study also described their EAR challenge; “At the beginning the problem we have is about the reading: what to read and how to read it” (p. 9). Jafari et al. (2018) mention how reading helps students grasp the overall structure and organization of their writing; a student in this study mention: “After reading various articles in my own discipline, I gained a general understanding of the overall structure and organization of the article. For example, which part comes first and what should be included in it" (p. 1253). Lei and Hu (2019) identify extensive reading of the relevant literature as a means to overcome linguistic challenges and report that two students in their study regard reading as “the best way to overcome language problems was to read the relevant literature extensively, emulate how others write, and learn the organization and expressions of others’ writing” (p. 67). Rezaei and Seyri (2019) also underscore the connection between reading papers and adopting their structures, and the purpose of reading to understand elaboration and emphasis. In the study of González-Ocampo and Badia (2019), the researchers report that supervisors provide well-written theses as examples and encourage students to immerse themselves in the relevant literature during the planning and drafting process.

In conclusion, findings of these studies affirm that English academic reading is not merely a preliminary activity but rather an ongoing and integral part of the writing process. This extends from the foundational step of comprehending academic texts in journals and books, and crafting manuscripts following nuanced aspects of EAW proficiency and structural organization. Findings present academic reading as a multifaceted ability that facilitates the learning of disciplinary expressions, grammar, and vocabulary, while fostering a deeper understanding of the subject matter. Moreover, the highlighted challenges associated with insufficient reading comprehension serve as a reminder of its indispensable nature in enhancing students’ academic writing skills. These findings align with the literature (Asención, 2008; Grabe, 2009; Grabe & Stoller, 2019; Kwan, 2009; Qian, 2002) as well as with the *Common European Framework of Reference for Languages* (*CEFR)* (Council of

Europe, 2020). The *CEFR* emphasizes that advanced-level users can comprehend various text types. Their reading proficiency extends to abstract, structurally complex, and highly colloquial literary and non-literary writings, inseparable from the advanced writing abilities described by the *CEFR* (Council of Europe, 2020). In short, the selected studies highlight the interconnected nature of academic reading and writing skills.

2.4.3.9. The need of helpful feedback

Feedback was identified as a crucial component of doctoral writing practices, serving as a strategy to improve students' writing skills and critical reasoning abilities. According to language socialization theory, feedback plays an important role in the students' academic performance (Duff, 2007a, 2007b, 2010b). The selected studies also underscored the significance of feedback in the development of academic writing abilities, particularly for students with limited experience in academic writing.

Aitchison et al. (2012) reported that feedback plays a supportive role in learning to write. However, feedback that does not meet the requirements of quality feedback—being helpful and timely—may have a negative impact on students' emotions and the writing progress. The study also highlighted the importance of peer feedback. Odena and Burgess (2017) found that feedback tailored to individual students' needs was the most helpful in improving their writing. One student reflected, "I had literally 5 minutes with my supervisor... she just made a few comments and that was enough. Supervisors are great to de-clutter your brain just enough for you to be able to see the way" (p. 576). The participants reported relying on their thesis advisors for all aspects of their doctoral tasks, including feedback on language issues, not just their research area and critical approach. They were aware that not all students were fortunate enough to have such supportive supervisors. The researchers also found that quality feedback received from peers was highly beneficial, even if it did not reach the level of expertise. Wang and Parr (2021) reported that feedback can also help develop critical reasoning skills in novice scholars.

Jafari et al. (2018) found that feedback from experts in the field or supervisors was more helpful in addressing students' needs regarding both content and language issues, compared to feedback from individuals who lacked knowledge of the research area and provided English language feedback. Language-focused feedback was found to be less effective in improving students' writing in discipline-specific ways. Jeyaraj (2020) also found that feedback focused on language issues from non-experts was not as helpful as expected. The studies consistently highlighted the importance of critical feedback, aimed at improving the quality of students' academic texts. Similar findings were shared in the studies by Bachiri and Oifaa (2020), Chatterjee-Padmanabhan and Nielsen (2018), Deng (2012), Huwari and Al-Shboul (2015), Jomaa and Bidin (2017), Lei and Hu (2019), Lin and Morrison (2021), Ma (2019), Walter and Stouck (2020), Xu and Zhang (2019). All these sources emphasized that feedback meeting the criterion of helpfulness plays a crucial role in scaffolding doctoral students' development, regardless of the status of the feedback providers (classmates, seniors, lecturers, members of their own research groups, or outsiders such as reviewers, audiences, and readers).

To sum up, the findings of these studies highlight the importance of constructive feedback for novice writers with limited exposure to academic texts and writing experience on their research area. These outcomes are in line with the literature in which scholars have consistently highlighted the same notion. According to Bitchener and Ferris (2012), targeted error correction helps students become aware of their weaknesses in accuracy and encourages them to work on improving those areas. Feedback that highlights grammatical, vocabulary, or structural errors provides explicit guidance, enabling students to make progress in language development and produce more accurate written work. In addition to these areas, feedback scaffolds NNES students' writing skill development by providing guidance on organization, coherence, and style. As emphasized by Hyland and Hyland (2020), feedback that addresses structural issues, clarity of expression, and logical flow helps students refine their writing abilities and improve the overall quality of their texts. Effective feedback teaches students self-editing strategies, enabling them to critically evaluate their own writing, make necessary revisions independently, and become autonomous writers. Moreover, feedback that acknowledges progress and provides encouragement boosts students' self-efficacy and fosters a positive attitude towards writing (Hattie & Timperley, 2007). Therefore, if educators can provide timely and constructive feedback, they will contribute to the growth and success of NNES students in English academic writing and thus help them become more proficient and confident writers.

2.4.3.10. The need for EAW instruction at the PhD level

The studies emphasized the need for explicit EAW instruction. Jalongo et al. (2014) stressed that doctoral institutions should provide proper training on academic writing in the target language, at least once, and that this training should be given early in the doctoral curriculum to ensure that students are equipped with the knowledge and skills to produce publishable papers. They also highlighted the importance of continuous support throughout the PhD program, considering the varying demands of writing across different stages of the program. In other words, curricula should integrate EAW into specific doctoral programs to scaffold students' development along the increasing requirements set in the writing tasks.

Odena and Burgess (2017) explicitly stated the need for writing training structured to meet students' needs. In their study, a doctoral student expressed the importance of academic writing courses specifically designed for NNES students, preferably taught by instructors who also have a NNES background. The student emphasized that instructors with an understanding of writing in a second language can better empathize with the challenges NNES students face, not only in terms of language learning and grammar, but also emotionally, particularly when feedback that may be demotivating. This highlights the need for not only academic writing assistance but also emotional support, counseling, and understanding which help students cope with the stress they experience during their doctoral journey. Ma (2019) reported that an NNES student's level of writing anxiety significantly decreased and their confidence in writing greatly increased when their writing was nurtured, and they felt encouraged.

The need of instruction in academic writing both in doctoral tasks and in meeting publication requirements was identified in several studies (Almatarneh et al., 2018; Chatterjee-Padmanabhan & Nielsen, 2018; González-Ocampo & Castelló, 2018; Jafari et al., 2018; Jeyaraj, 2020; Langum & Sullivan, 2017; Lei & Hu, 2019; Walter & Stouck, 2020; Wang & Parr, 2021). Overall, these findings underscore the need for targeted EAW training in the form of pedagogical and institutional assistance to ensure students' success in their written doctoral assignments and publications. These outcomes are aligned with the importance of creating a nurturing environment in which learners can academically socialize into appropriate practices, as discussed in the literature (Carter, 2011; Dörnyei & Ryan, 2015; Duff, 2007b, 2010b; McAlpine, 2020).

2.4.3.11. English academic writing at the doctoral level involves hard emotional work

English academic writing at the doctoral level is an emotional journey. The selected studies shed light on the emotional challenges doctoral students have to cope with, particularly those with limited EAW skills. They often struggle to meet the demanding standards of doctoral writing, and such difficulties lead to induced stress, anxiety, frustration, and a sense of being overwhelmed. However, it has also been reported that a sense of support greatly assists students in maintaining their motivation and focus on improving their writing.

Aitchison et al. (2012) emphasized the emotional toll of doctoral writing experienced by both students and their thesis advisors, describing it as a journey filled with pain and frustration. Negative emotions were prevalent among the students in their study, with comments such as "I hate every bit of it," "a grueling experience," and "I have felt like giving up, I just get stuck in a little hole." (pp. 438-440) Supervisors also acknowledged that the writing process was a major hurdle, a difficult part of their job.

Badenhorst and Xu (2016) highlighted fear, stress, anxiety, and trepidation experienced by students who were not quite able to write at the expected level; "Writing in academic contexts, more than in others, is often closely tied to emotions" (p.11). They emphasized the importance of developing coping mechanisms for negative emotions such as tension and stress. Chatterjee-Padmanabhan and Nielsen (2018) highlighted the difficulties doctoral students face, stating that they often feel overwhelmed, anxious, stressed, and fearful. Similarly, Almatarneh et al. (2018) found that NNES doctoral students who lack sufficient academic writing skills in English experience dissatisfaction, stress, anxiety, frustration, and fear of making mistakes in their texts. Very similar points emerged from Huwari and Al-Shboul's (2015) study: they identified stress, anxiety, and low levels of self-perceived writing capabilities as demotivating factors for doctoral students.

In Lei and Hu's study (2019), a student expressed their overwhelming disappointment with EAW, "my frustration was beyond words". This study highlighted the phenomenon of persistent anxiety resulting from a low level of academic knowledge, which was triggered by reviewers' critical comments. Jeyaraj (2020) reported on the emotional burden experienced by students due to their perceived lack of academic writing competence. A student's

reflection revealed their high levels of stress and uncertainty about what was expected of them in their texts. Ma (2019) also noted that students often felt anxious about their writing but lacked knowledge about ways to improve their EAW. However, when they received writing support, their anxiety declined and their confidence grew, indicating the dynamic interaction between these two variables and the impact community support can offer.

Overall, English academic writing at the doctoral level involves serious emotional work and coping, as evidenced by the experiences of students in the selected studies. The emotional toll of doctoral writing, characterized by fear, stress, anxiety, and frustration, poses significant challenges to students' motivation, self-confidence, persistence, and well-being (Cornwall et al., 2019; Levecque et al., 2017; Rico & Bunge, 2021; Russell-Pinson & Harris, 2019; Stubb et al., 2011). As stress and anxiety can negatively impact academic performance (Ajmal & Ahmad, 2019; Barbayannis et al., 2022; Pekrun et al., 2002), the ability to manage one's emotions is an essential factor in the process of learning and skill development (Dörnyei & Ryan, 2015; Gkonou et al., 2017).

2.4.3.12. Factors contributing to students' motivation

Academic writing in English at the doctoral level often poses significant challenges for novice NNES student-writers. As expressed by a student in Badenhorst and Xu's (2016) study, "Writing my PhD thesis was excruciatingly painful" (p. 6). However, the selected studies also revealed that students can approach their EAW experiences positively and maintain their motivation when they are confident about their academic writing abilities, they believe in their ability to overcome challenges in their writing journey and receive support from their respective academic communities.

The detrimental impact of a low level of confidence on the EAW progress and achievements is highlighted in Lei and Hu's (2019) publication, as it leads to "undue anxiety" (p. 68). In the study of Aitchison et al., (2012), a student reflects, [writing up a manuscript] "was a lot of work and frustrating sometimes. It took months to get it right. But so rewarding – I'm proud of it" (p. 443). Badenhorst and Xu's (2016) findings also underscore the importance of self-confidence in academic writing accomplishments. As one of their participants summed it up, "I've developed confidence over time. I've had times of crisis, though. There was one time in particular when I received a scathing review, and my confidence was knocked badly. If I hadn't already had publications, I'm not sure I would have recovered" (p.12). Jafari (2018) further demonstrates how students' self-confidence increases as they witness their success in EAW: the students' "confidence grew with writing their first research paper in English. They commented that their success in writing their first paper helped them to overcome their fear of writing their next research papers in English" (p.1254). As a participant in Jalongo et al.'s (2014) study also affirmed, "After getting through the first publication, this self-confidence is greatly enhanced" (p.246).

Jafari (2018) emphasizes the crucial role of support and encouragement students get from their academic community in sustaining motivation. Along similar lines, Deng (2012) discusses how "guided assistance and support from more experienced people when novice

learners are involved in actual performance" (p.305) enhance students' confidence in their writing abilities. This phenomenon is further echoed in the studies conducted by Chatterjee-Padmanabhan & Nielsen, (2018), González-Ocampo & Castelló (2018), Huwari & Al-Shboul, (2015).

Furthermore, the chosen publications indicate that faculty support impacts students' academic writing progress significantly (Lin & Morrison, 2021) and that such support boosts learners' writing confidence (Ma, 2019). In Ma's (2019) study, a student expressed that their confidence grew considerably with support, even though they initially lacked confidence in successfully completing the doctoral program: "Since I got mentoring sessions and learned how to improve my writing, I started to feel my confidence" (p. 77).

Therefore, the findings align with the key ideas in self-determination theory (SDT) proposed by Ryan and Deci (2017). According to SDT, students are more likely to maintain motivation when they experience progress, have confidence in overcoming challenges autonomously, and receive support from their academic communities. In addition, the outcomes can be interpreted in the framework of language socialization theory, wherein students who perceive themselves as part of a supportive academic environment, experience progress, and receive guidance, are more likely to build and sustain confidence, motivation, and persistence in their academic writing endeavors (Duff, 2007b, 2010b).

2.4.3.13. Additional findings indirectly related to the EAW construct

While the selected studies focused on various aspects of English academic writing, it is worth noting that one study argued for the importance of a factor indirectly related to EAW. Langum and Sullivan (2017) emphasized the importance of supporting doctoral students to become academic writers both in English and in their first language. They believed that expecting NNES doctoral students to publish in the dominant language (English), rather than in their mother tongue, is a "deficient" perspective. While this argument does not establish a direct relationship between academic writing abilities in students' two languages, it is underpinned by Cummins' (1979) developmental interdependence hypothesis in additional language learning.

2.4.4. Main conclusions drawn from the selected studies

The key findings of the selected studies provide an understanding of the multifaceted challenges novice NNES scholars face during their EAW journey. These challenges are illuminated by overarching themes such as vocabulary, grammar, syntax, critical thinking, paraphrasing, coherent presentation of ideas, ability to write literature reviews, knowledge of research and research methodologies, English academic reading, feedback, explicit instruction, emotional challenges, and motivation (Aitchison et al., 2012; Almatarneh et al., 2018; Chatterjee-Padmanabhan & Nielsen, 2018; Jomaa & Bidin, 2017; Lin & Morrison, 2021; Odena & Burgess, 2017).

The inseparable nature of these themes echoes the views of scholars such as Ken Hyland (2004a, 2008, 2009, 2016b, 2022), who defines EAW as an educational approach focused on identifying specific language features, discourse practices, and communicative skills pertinent to target academic groups. Hyland's framework acknowledges learners' subject-matter needs and expertise, highlighting writing as a social practice influenced by specific academic contexts (Hyland, 2008, 2009, 2014, 2018) in line with language socialization theory. In addition, aligning with the perspectives of Swales and Johns, the interconnectedness of critical thinking, vocabulary, syntax, and paraphrasing emerges as pivotal for effective academic communication (Johns, 2008, 2011; Johns & Swales, 2002; Swales, 2019). Language socialization theory further supports the notion that academic writing proficiency is a dynamic and contextually embedded process, resonating with the discussed challenges and motivations (Duff, 2003, 2007b, 2010a; Duff et al., 2019).

Based on these findings, it is evident that the foundational role of vocabulary, as emphasized by Hyland (2019), is intricately connected to challenges in paraphrasing, underscoring its centrality in developing academic writing skills (Almatarneh et al., 2018; Chatterjee-Padmanabhan & Nielsen, 2018; Huwari & Al-Shboul, 2015; Langum & Sullivan, 2017). Grammatical competence, highlighted by Hyland (2014, 2019), greatly influences the clarity and overall quality of academic writing, influencing its perception within the academic community (Badenhorst & Xu, 2016; Huwari & Al-Shboul, 2015; Wang & Parr, 2021). Syntax, intimately linked to vocabulary, influences the construction of clear and grammatically sound sentences, crucial elements in coherence and flow (Lei & Hu, 2019; Ma, 2019; Rezaei & Seyri, 2019; Xu & Zhang, 2019).

The sophisticated relationship between the ability to critically engage with literature, vocabulary, and syntax becomes apparent, showcasing their collective role in presenting complex ideas and arguments effectively. Challenges in paraphrasing, discussed by Hyland (2008, 2014) and aligned with Swales' genre analysis, demonstrate the interconnectedness of vocabulary and critical thinking (Hyland, 2015; Swales, 2004, 2019). These points emphasize the need for a rich language repertoire and the ability to engage critically with source materials, echoing the insights of other scholars (Bachiri & Oifaa, 2020; Lei & Hu, 2019; Walter & Stouck, 2020; Wang & Parr, 2021).

Moreover, based on the findings, the overall coherence of written work emerges as an important theme in EAW, encapsulating the interdependence of vocabulary, syntax, critical thinking, and paraphrasing. This theme extends to broader proficiency in academic writing, including the ability to conduct a critical review of the literature and comprehend complex academic texts, emphasizing the inseparable relationship between reading and writing proficiency (Aitchison et al., 2012; Almatarneh et al., 2018; Council of Europe, 2020; Jomaa & Bidin, 2017; Rezaei & Seyri, 2019)—a concept consistent with the discussions found in the literature (Hyland, 2015, 2019; Swales & Freak, 2011).

Feedback, integral in the development of academic writing abilities, is intertwined with the overarching need for emotional and pedagogical assistance (Hyland, 2013; Hyland & Hyland, 2019; Zhang & Hyland, 2021). The studies advocate for explicit instruction in English

academic writing, recognizing its role in addressing the interconnected components of vocabulary, syntax, critical thinking, and other essential skills (Almatarneh et al., 2018; Bachiri & Oifaa, 2020; Lin & Morrison, 2021; Odena & Burgess, 2017; Walter & Stouck, 2020).

The emotional challenges, such as stress and anxiety associated with doctoral-level writing, underscore their complicated link to writing proficiency and their impact on students' motivation (Bachiri & Oifaa, 2020; Jafari, Jafari, et al., 2018; Jeyaraj, 2020; Lei & Hu, 2019; Walter & Stouck, 2020). This point is in line with language socialization theory, emphasizing the dynamic and contextually embedded nature of academic writing proficiency (Duff et al., 2019; Duff & Anderson, 2015; Duff & Doherty, 2014; Duff & Talmy, 2011; Kim & Duff, 2012; Zappa-Hollman & Duff, 2014). Motivation, identified as a critical factor, is revealed as interconnected with academic autonomy, competence, and a sense of being supported (Almatarneh et al., 2018; Bachiri & Oifaa, 2020; Lin & Morrison, 2021; Walter & Stouck, 2020). This understanding highlights the need for ongoing support and a sense of belonging within the academic community, which is in line with the principles of STD theory of maintaining motivation through competence, autonomy, and relatedness (Deci & Ryan, 1980; Ryan & Deci, 2017).

In conclusion, fostering a comprehensive understanding of these interrelated elements of EAW indicated by the findings of the selected studies, informed by the insights from scholars and aligned with the STD and language socialization theories, is imperative for creating effective interventions and promoting sustainable academic success for novice NNES doctoral students.

CHAPTER 3. RESEARCH METHODOLOGY

Chapter 3 offers a detailed account of the research methodology. The first section outlines the overarching aims of the empirical studies. The second section presents the research design: it provides an in-depth description of the research questions, participant selection criteria, data collection instruments employed, and data analysis techniques utilized for the exploratory and qualitative studies and the large-scale survey. This section also presents a thorough account of the ethical approval application process of the research project, highlighting the adherence to ethical guidelines and ensuring the protection of participants' rights and confidentiality.

3.1. Aims of the research project

The goal of this research project was to examine and understand the experiences of NNES international students in the realm of EAW at the doctoral level. Specifically, in the first exploratory qualitative phase, the project aimed to explore specific areas of EAW in which students would like to improve. In the large-scale quantitative phase, the study aimed to investigate doctoral students' EAW experiences both at the start and the current phase of their PhD studies, and to examine the interplay between their current EAW abilities and various factors within the EAW context. Moreover, the project aimed to explore how NNES doctoral students conceptualize their EAW experiences and express them by inviting them to express it through the lens of personal metaphors, aiming for a profound understanding of their emic perspectives. Lastly, the study aimed to investigate the specific types of writing support NNES doctoral students believe that they need to enhance their EAW abilities, with the intention of contributing to the development of tailored and effective writing support programs for this demographic.

3.2. Research design

To fulfill the goals of the research project, an exploratory sequential mixed methods design was adopted. As proposed by Creswell and Creswell (2018), it involved a two-phase process: an initial qualitative phase followed by a subsequent quantitative phase. This design offers researchers opportunities to explore a research topic in-depth, allowing for a comprehensive understanding of the phenomenon under investigation.

The qualitative phase of the exploratory sequential mixed methods design allows researchers to gain a comprehensive understanding of the research topic, identify relevant themes, and generate research questions for further investigation, even though such studies tend to involve a few participants (Creswell & Creswell, 2018; Creswell & Poth, 2016; Johnson & Onwuegbuzie, 2004; Leavy, 2022; Poth & Bullock, 2022). By analyzing qualitative data collected in the initial phase, researchers can explore the nuances and complexities of the phenomenon under study, providing rich and detailed insights.

As a follow-up to the qualitative phase, the exploratory sequential mixed methods design incorporates a quantitative phase to collect numerical data that can be analyzed statistically

(Creswell & Creswell, 2018; Johnson & Onwuegbuzie, 2004; Leavy, 2022; Mackey & Gass, 2011; Marczyk et al., 2010). This phase involved gathering data from a larger sample to allow researchers to generalize their findings to a broader population (Johnson & Onwuegbuzie, 2004). Through quantitative data analysis, researchers can quantify relationships, examine patterns, and provide statistical evidence to support their research findings. This integration of qualitative and quantitative approaches enhances the rigor and comprehensiveness of the research study (Creswell & Creswell, 2018).

The exploratory sequential mixed methods design has been recognized for its strength in providing a holistic understanding of complex research topics (Creswell & Creswell, 2018). By integrating findings on qualitative and quantitative data analyses, researchers can gain deeper insights, enhance the validity of their findings, and approach research questions from multiple perspectives (Johnson & Onwuegbuzie, 2004). The sequential nature of this design enables researchers to build upon qualitative findings with quantitative evidence, resulting in a more robust and comprehensive understanding of the phenomenon being studied (Creswell & Creswell, 2018; Mackey & Gass, 2011).

Overall, mixed method research design offers a high degree of trustworthiness to the investigative process. By integrating both quantitative and qualitative approaches, mixed methods provide a comprehensive and holistic understanding of research phenomena. The convergence of numerical data and nuanced qualitative data ensure that the research is robust and multifaceted, capturing the intricacies that a singular method might overlook. This design enhances the validity of findings, as the strengths of one approach compensate for the limitations of the other. The results are more reliable and trustworthy, rooted in a balanced and comprehensive exploration of the subject matter (Cresswell, 2012a; Creswell & Creswell, 2018; Johnson & Onwuegbuzie, 2004; Mackey & Gass, 2011).

3.2.1. An exploratory study of NNES doctoral students' EAW experiences

3.2.1.1. Aim and research questions

The aim of the exploratory study was to investigate doctoral students' emic perspectives on how they wanted to improve their academic writing abilities in English. The target population was doctoral students in a NNES context in Hungary. Two research questions were formulated to guide the qualitative exploratory phase of the research project.

3.2.1.2. Participants

The study comprised a diverse group of 13 doctoral students, who came from seven different countries where English is not spoken as an official language. All international students were from an on-campus cohort studying in the educational science doctoral program at the University of Szeged in Hungary during the academic year of 2021-2022.

Within the group of participants, there was a range of academic progression: five students were in their first year of their PhD program, seven in their second year, and one student was in their third year. These different stages of doctoral studies added valuable perspectives and

allowed for a comprehensive exploration of the research topic. It is important to consider diverse perspectives and experiences when examining the relationship between NNES doctoral students and their academic writing abilities in English, the language of instruction.

All international doctoral courses at the University of Szeged are conducted in English, thus, advanced English language proficiency is required for successful engagement and participation in the program. None of the students involved in the study were native speakers of English, further underlining the significance of investigating the challenges and experiences of NNES doctoral students in a context where English is a lingua franca for both faculty and students.

By collecting data from NNES doctoral students from a range of countries and academic backgrounds, the study aimed to capture a broad spectrum of experiences and perspectives. This approach allows for a deep understanding of the challenges NNES doctoral students face and the potential implications for writing support programs tailored to their specific needs.

Overall, the study's inclusion of thirteen NNES doctoral students from various countries and different stages of their PhD journey at the University of Szeged in Hungary provides a rich and comprehensive dataset. The participants' backgrounds in educational sciences, coupled with the English language medium of instruction, contribute to a focused exploration of EAW challenges and needs.

3.2.1.3. Data collection instrument

To address the research questions, a simple and straightforward data collection instrument was used, consisting of an open-ended question. It asked participants to identify specific areas in which they felt they needed further development in their English academic writing skills. Respondents were invited to provide a list of five specific areas that they wished they were better prepared at in terms of their academic writing skills in English: “Please list five areas of English academic writing you want to be better at.”

This approach allowed for gathering qualitative data that directly reflected the students’ perceptions and priorities regarding their English academic writing needs anonymously in a non-threatening manner. By using an open-ended question, the students had the freedom to express their thoughts and articulate their areas of concern in their own words. This method aligns with the principles of qualitative research, emphasizing the importance of capturing participants’ subjective experiences and viewpoints (Dillman et al., 2014; Fowler, 2013; Smith, 2015; Tourangeau & Yan, 2007). By employing an open-ended question, the research design encouraged participants to provide as rich and detailed responses as they felt useful to enable a deep and specific understanding of their individual needs and experiences (Cresswell, 2012a; Creswell & Creswell, 2018; Creswell & Poth, 2007).

The list format of the question encouraged the participants to provide concise and focused responses, enabling a systematic analysis of the data. Also, the task was not seen as a test. The use of five specific areas also provided a structured framework for the participants to

prioritize and articulate their most pressing needs in terms of their academic writing skills in English. This approach is consistent with previous studies that have utilized similar techniques to elicit participants' perceptions and preferences. The inclusion of a limited number of areas to be listed ensures that the participants provide targeted and actionable feedback, facilitating a comprehensive assessment of their specific needs (Spiers & Smith, 2019). Asking for more than one item was meant to allow respondents to consider multiple ideas beyond only one what would have jumped to their mind (Dillman et al., 2009, 2014; Tourangeau et al., 2000).

3.2.1.4. Data analysis

To safeguard the privacy and confidentiality of the participants, the responses were coded anonymously in adherence to the guidelines outlined by the American Psychological Association (American Psychological Association, 2002, 2016, 2020). This coding process guaranteed that the identities of the students were kept confidential throughout the data analysis phase, thereby upholding their privacy and anonymity.

The analysis of the students' responses followed the well-established methodology proposed by Saldaña (2009). Saldaña's approach to qualitative data analysis provided a structured and rigorous framework for examining and interpreting the participants' responses systematically. The process involved several iterative steps, including data coding, categorization, and interpretation, which facilitated a comprehensive exploration of the participants' perspectives and experiences. By adhering to Saldaña's methodology, the researcher, in interaction with two other researchers, could identify and analyze patterns, themes, and key insights within the collected dataset. This systematic approach ensured a thorough investigation of the participants' viewpoints and enabled a comprehensive understanding of the research topic at hand.

3.2.2. A large-scale survey of NNES doctoral students' EAW experiences

3.2.2.1. Aims and research questions

The large-scale survey phase of the research project aims to investigate the interconnections among various factors influencing the EAW abilities of NNES doctoral students. Based on the findings of the literature review of the selected studies (section 2.4) and the exploratory study (section 4.3), these factors include the students' self-perceived abilities in English academic reading (EAR), EAW, and conducting doctoral research, as well as the perceived quality of feedback they received, coping with emotions, and the factors that positively influence their motivation throughout their doctoral journey. Furthermore, the study seeks to explore how NNES doctoral students conceptualized their EAW experiences through personal metaphors. Additionally, the research aims to identify specific types of writing support that NNES doctoral students believe are necessary to enhance their EAW abilities.

3.2.2.2. Participants

A total of 255 NNES doctoral students, including 13 students from the exploratory study (see Table 3.1), participated in the study, representing a diverse group of individuals studying in Hungary. They were enrolled in 65 international PhD programs, all conducted in English, during the 2021-2022 academic year. They came from 49 countries and were users of 48 first languages. Regarding their English proficiency levels, a minority of the students (8.6%) had C2 level language certificates, denoting native-like proficiency level of English. Less than half of the participants held C1 (46.3%) and B2 (45.1%) English language certificates, indicating advanced and upper-intermediate proficiency, respectively. In terms of gender distribution, 125 respondents (49.01%) identified as female, whereas 127 (49.80%) identified as male; three students (1.17%) chose not to disclose their gender. Most participants were in the early stages of their PhD programs: 36.5% were in their first and 25% in their second year. A smaller ratio of respondents was in their third (18%) and fourth year (16.9%), whereas a few (4%) had been studying for five or more years. A small percentage (1.6%) did not specify their current year of study. Therefore, these participant demographics represent diversity and a breadth of perspectives in the study.

3.2.2.3. Data collection instrument

A survey was designed to collect data. It included 87 items based on the findings of the literature review (Chapter 2) and the exploratory study (Chapter 4). Both the literature review and the exploratory study revealed that doctoral students require a high level of knowledge in English, including vocabulary, grammar, paraphrasing, coherence, and cohesion. Additionally, they underscored the importance of research knowledge and English academic reading (EAR) for EAW at the doctoral level. Furthermore, the literature review (Chapter 4) emphasized that EAW is an emotional endeavor. Feedback was identified as crucial for enhancing the quality of students' EAW abilities, while motivation was recognized as pivotal for successful writing. Therefore, the survey focuses on the participants' perceptions and experiences related to their English literacy background, English academic reading (EAR), English academic writing (EAW), their knowledge about their respective research areas and their abilities to design and conduct research required for doctoral research, feedback, managing emotions, and factors influencing motivation when coping with the demanding nature of EAW during the doctoral journey.

The survey (see Appendix B) used items on a 6-point Likert scale, following the approach proposed by Dörnyei and Dewaele (2022). This scale allowed participants to rate their agreement or disagreement with each statement and did not offer a middle option. In addition to the self-assessed statements, the last two items were open. The first item elicited the participants' personal metaphors describing their EAW experience. This item provided respondents an opportunity to express their unique perspectives and experiences through metaphorical language in a creative and elaborate form different from responding to closed items. The second open-ended item gathered insights into the specific kind of writing support that participants needed to improve their EAW abilities. Responses to these two open

questions added a qualitative dimension to the survey, allowing for a deeper exploration of the participants' lived experiences, preferences, and emic perspectives.

3.2.2.4. Data analyses

First, to ensure the privacy of the participants, all students' responses were subjected to anonymous coding, and all personally identifiable information was anonymized following guidelines of the American Psychological Association (2020).

To answer the research questions, a combination of analytical techniques was employed (Chapter 5). Descriptive analyses were used to summarize and present the characteristics of the participants and their responses, providing an overview of the data. T-tests were used to examine potential differences in the variables of interest between different groups, allowing for comparisons and insights into variations within and between groups. Correlational analyses were utilized to explore the relationships and associations between the variables under investigation to identify potential connections and patterns. Additionally, regression analysis was employed to assess the predictive relationships between variables to gain understanding of their interplay. These diverse analytical approaches facilitated a comprehensive examination of the datasets, enabling a thorough exploration of the research questions and supporting the interpretation of the research findings (Field, 2013; Hair et al., 2017; Tabachnick & Fidell, 2013).

Furthermore, thematic analysis was used to analyze the responses to the open-ended questions in the survey. The qualitative data obtained from the participants' personal metaphors describing their English academic writing experiences and their identified needs for writing support were coded and categorized into themes to capture the main ideas and patterns present in the data following Saldaña (2009). These two open questions are analyzed in two new chapters (Chapter 6 and 7).

3.2.3. Ethical aspects

Ethical approval is a vital step in conducting research, as it ensures that studies are conducted in an ethically responsible manner (American Psychological Association, 2020). Therefore, an application for ethical approval was submitted to the Institutional Review Board (IRB) of the Doctoral School of Education at the University of Szeged. The application included a detailed research plan and a proposed research timeline. After a thorough review process, the IRB granted ethical approval for the project; the reference number assigned to the approval is 17/2021. The ethical approval document can be found in the appendices.

CHAPTER 4. AN EXPLORATORY STUDY OF NNES DOCTORAL STUDENTS' ENGLISH ACADEMIC WRITING EXPERIENCES

Chapter 4 focuses on the first phase of the research project and it comprises five sections. The introductory section provides background information for the study. The second section outlines the research methodology; it includes the research questions, sociodemographic profiles of the participants, and a step-by-step description of the procedure and the analysis of the dataset. The next part presents the findings of the data analysis, whereas the fourth section includes the discussion. The fifth section concludes the chapter by presenting the key findings and how they contribute to further studies.

4.1. Introduction

A doctoral degree is considered the pinnacle of academic achievement, and as such, doctoral dissertations are expected to provide substantial and new contributions to the respective fields of study (Larivière, 2011). It is crucial to note that students are fully accountable for every statement they make in their dissertations. In the context of international doctoral programs conducted in English, students are required not only to write their dissertations in English but also to publish their research articles in refereed journals in English (Becker, 2008; Glatthorn & Joyner, 2005; Joyner et al., 2018; Paltridge, 2002; Starfield & Paltridge, 2019). This requirement poses a particular challenge for aspiring academic student-writers from NNES backgrounds, particularly if they lack sufficient experience in English academic writing (EAW). As a result, these individuals may encounter difficulties in meeting the stringent demands of doctoral programs within the prescribed time frame (Hyland & Shaw, 2016). To investigate the specific areas in which culturally and educationally diverse international students aim to improve their EAW skills, a qualitative study was conducted in a specific context. The study involved participants from seven countries spanning three continents, namely Asia, Europe, and Africa. None of the participants were native speakers of English or came from a country where English is an official language. Following the research methodologies outlined by Saldaña (2009), the collected data underwent a rigorous analysis process to identify key themes and patterns in the students' responses. The detailed findings of this analysis are presented in the next sections.

4.2. Method

4.2.1. Aim of study

The aim of this exploratory study was to investigate doctoral students' emic perspectives on improving their academic writing in English. The target population was doctoral students in a NNES context at a Hungarian university.

4.2.2. Research questions

3. Which areas of English academic writing do non-native English-speaking doctoral students want to be better at?
4. What additional areas do they mention beyond English academic writing?

4.2.3. Participants

The participants were thirteen doctoral students from seven countries where English is not used as an official language. To meet privacy and ethical requirements, all participants were coded as participants P01 to P13. Detailed information about the participants is presented in Table 4.1.

Table 4.1 Sociodemographic characteristics of 13 participants in the exploratory study

	Country of origin	PhD program	First language	Gender
1	Myanmar	2nd- year PhD	Burmese	Female
2	Myanmar	3rd -year PhD	Burmese	Female
3	Indonesia	2nd- year PhD	Bahasa Indonesia	Male
4	Indonesia	2nd- year PhD	Bahasa Indonesia	Female
5	Indonesia	1st-year PhD	Bahasa Indonesia	Female
6	Ethiopia	2nd- year PhD	Tigrigna	Male
7	Indonesia	1st-year PhD	Bahasa Indonesia	Female
8	Hungary	1st-year PhD	Hungarian	Female
9	Indonesia	2nd- year PhD	Bahasa Indonesia	Female
10	Yemen	2nd- year PhD	Yemeni Arabic	Female
11	Chinese	1st-year PhD	Chinese	Female
12	Myanmar	2nd- year PhD	Burmese	Female
13	Laos	1st-year PhD	Lao	Male

4.2.4. Data collection instrument

To address the research questions, an open-ended task was employed to explore students' needs related to their development in English academic writing. Students were given a written reflection task: asked to compile a list of five specific areas in which they felt they needed better preparation in terms of their English academic writing skills: "Please list five areas of English academic writing you want to be better at.". Following established research practices (Babbie, 2020; DeVellis & Thorpe, 2021; Polit & Beck, 2006), the open question was evaluated by two experts. They confirmed that the instrument was suitable for addressing the research questions.

4.2.5. Procedure

All thirteen students were enrolled in an elective seminar on mixed methods research design in the fall semester of the 2021-2022 academic year at the University of Szeged, Hungary. Even though students were supposed to come up with five answers, P02 shared four answers, whereas student P04 gave six, whereas eleven students wrote five answers. Finally, the total number of responses was 65. The wording of the responses varied: P01 and P12 gave their answers by listing the items in the form of phrases. Participants P02, P03, P08, and P11 gave longer answers explaining their points in full sentences. Student P13 wrote both phrases and short sentences. Other students (P04, P05, P06, P07, P09, P10, and P12) gave short answers in phrases or clauses.

Following the literature on analyzing qualitative data, a research expert and I carefully examined the raw dataset in multiple rounds. As a first step, the original data set was thoroughly read to look for all conceivable theoretical aspects identified in the literature. This stage was "an opportunity for researchers to reflect deeply on the contents and nuances of data and to begin taking ownership of them" (Saldaña, 2009, p. 81). After that, the whole dataset was broken down into discrete parts to look for similar themes for coding. According to Saldaña (2009, p. 3), a code is "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data". After identifying the key words and phrases, emerging themes were specified. In the first round, inter-rater correlation between the two raters was calculated and it was .929. As a result of the first round, two main themes emerged:

a. Themes relevant to the construct of English academic writing abilities
b. Themes external to the construct of EAW abilities

After agreeing on these two main themes, the identified codes were arranged into further themes. However, in this step, the codes which were already identified in the previous step were reviewed and certain codes were rearranged whenever necessary. Saldaña (2009, p. 149) mentioned that these "advanced ways of reorganizing and reanalyzing" can give the researchers opportunities to discover more precise words or phrases. By doing so, it becomes possible to combine codes that are conceptually similar, while also evaluating the usefulness of infrequent codes within the broader coding framework (Saldaña, 2009). Once again, an attempt was made to independently categorize similar items under the themes. At this stage, certain codes that appeared to be promising keywords in the initial round were eliminated, as some of them appeared redundant after a complete interpretation and coding of the entire dataset. Following the completion of individual coding, the inter-rater correlation was reassessed, revealing a high correlation of .836 in the second round of the coding process.

4.3. Findings

4.3.1. Areas for improvement in English academic writing in students' responses

Fourteen themes were found relevant to the construct of EAW abilities. These included genre, cohesion and coherence, conciseness, citation and referencing, practice, ability to turn knowledge into text, vocabulary, grammar, flow of ideas/idea development, audience, paraphrasing, knowledge of research methodology, and reading to write (see Table 4.2).

Table 4.2 Themes relevant to the construct of English academic writing abilities

	Themes / Participants	**P01**	**P02**	**P03**	**P04**	**P05**	**P06**	**P07**	**P08**	**P09**	**P10**	**P11**	**P12**	**P13**
		F	**F**	**M**	**F**	**F**	**M**	**F**	**F**	**F**	**F**	**F**	**F**	**M**
		Y-2	**Y-3**	**Y-2**	**Y-2**	**Y-1**	**Y-2**	**Y-1**	**Y-1**	**Y-2**	**Y-2**	**Y-1**	**Y-2**	**Y-1**
1	Genre				✓	✓		✓	✓	✓	✓	✓		
2	Cohesion and coherence	✓		✓		✓			✓					
3	Conciseness		✓		✓		✓		✓				✓	
4	Citation & referencing		✓				✓	✓		✓	✓		✓	✓
5	Practice		✓											
6	Ability to turn knowledge into						✓							

	text														
7	Vocabulary	✓		✓	✓				✓		✓	✓	✓	✓	
8	Flow of ideas/idea development	✓	✓	✓	✓		✓	✓	✓			✓			
9	Audience			✓					✓						
10	Paraphrasing	✓	✓		✓			✓			✓				✓
11	Knowledge of research methodology	✓				✓		✓		✓					
12	Grammar					✓				✓		✓	✓	✓	
13	Reading to write			✓	✓	✓			✓			✓			

Note: F=female, M=male, Y-1= 1st-year PhD student, Y-2= 2nd-year PhD student, Y3=3rd-year PhD student

As shown in Table 4.2, the theme, *genre*, appeared in seven students' responses. For example, students P05 and P10 would like to learn how to write review papers; student P09 expressed her wish to be able to write in line with target journals' preferred styles; student P11 mentioned the importance of keeping their writing format correct; student P08 mentioned her difficulty in sticking to the academic genre while writing as follows: "For me, it is not easy to remain academic…..I tend to step out of the conventional writing forms".

The second theme, *conciseness,* was mentioned in five students' responses. They reflected the phenomenon of writing unnecessarily lengthy and wordy texts as a threat to accuracy of academic writing practice. For example, student P08 wrote, "it is not always easy to be clear and to the point without going into unnecessary details". Similarly, student P06 mentioned that he wanted to avoid "repetition" in his writing, and his habit of "hiding the main points with needless words". The extended response student P02 wrote explained how classroom practices in her home country contrasted with the principle of brevity in academic English, highlighting the fact how one's writing style can be influenced by their cultural background:

> In my previous experience, teachers normally trained us to write more and having a longer essay made me feel so proud for some reason. Therefore, I got used to writing longer texts with longer explanations. As a result, wordiness and lack of conciseness become my weaknesses in writing academic English texts. (P02)

The need to improve EAW ability in the areas of *cohesion and coherence* was found in the responses given by four students; for example, student P05 said that she would like to "have a very good quality of academic writing in terms of coherence, cohesion," whereas student P03 wrote, "My writing should be more coherent."

Citation and referencing were mentioned by seven students; some of them specified that they needed to know more about "direct quotation" (P02), "citation" (P06), "references" (P07) and using one of the most popular reference styles, "APA" (P10).

The importance of enough *practice* for effective academic writing performance was specified in the answer of one student: "…writing practices had been limited and I wish I practiced academic English writing skills in my university years" (P02). This retrospection revealed

that this doctoral student must have had inadequate exposure to academic writing in English before entering their PhD programs and she would have welcomed more opportunities.

In terms of *ability to turn knowledge into text*, student P06 expressed that he had problems with "writing what he (I) had in mind"; this answer revealed that a novice writer might have challenges in figuring out how to integrate all that they know and have learnt in their respective research domains into a scholarly paper. In other words, being knowledgeable is not enough, one needs to be able to produce appropriate texts to convey messages.

Developing lexical resources was mentioned by eight participants, as they would like to widen their scope of *vocabulary* knowledge; for example, students pointed to their challenges with "academic vocabulary", "technical terms", "academic jargon", "using appropriate terminology" and "English diction".

As for *flow of ideas/idea development*, eight students mentioned their concern about these points. For example, student P03 stated, "My ability to flow ideas in my writing has to increase." Respondents wanted to improve their way of proposing ideas so that they could come up with valid arguments in their written texts, for example, in the words of student P02, "In some cases, thinking and writing occur at the same time and I gave more priority to my ideas which resulted in an unfocused flow of thoughts." This response points to the problem of having to focus on form rather than meaning while composing an academic text. This dual focus may lead to difficulties.

References to *audience* emerged in two students' responses, as they wished they could make themselves understood. This indicated that they were aware of the fact that academic writers have to meet the needs of targeted readers.

As for *paraphrasing*, six students would like to know how to "paraphrase the text better" (P07) in order to avoid plagiarism without distorting the original message. As P01 put it, "accurate paraphrasing was a challenge". The need of instruction in academic writing was best worded in the answer of P02: "I didn't have a chance to join any courses for academic writing in English, I had some difficulties in paraphrasing other people's ideas in a convincing way. I wish I had some training on how to paraphrase others' ideas concisely."

Four students mentioned that they wanted to improve their knowledge about *research methodology*. Two respondents gave almost the same answer: P05 would like to "understand how to design research instruments which are used in quantitative and/or qualitative research, have (a) thorough knowledge on formulating research problem and hypotheses, selecting the samples/subjects/objects of the study, selecting the design of the study, conducting data collection and analysis, and interpreting the results". Student P07 wanted to "know how to determine the research method and be able to formulate the research questions both quantitatively and qualitatively. In addition to that, we have to be able to design research instruments, conduct data collection and data analysis." Both responses indicate that students are aware of not only their needs concerning their EAW but also closely related content areas

they must be well-versed in. Thus, they realize that form and content cannot be separated but both need to be borne in mind.

Regarding the development of linguistic competence, five students expressed that they wanted to improve their *grammatical* knowledge, and three other respondents mentioned specific areas such as punctuation (P05) and sentence construction (P09 and P12) they needed to know more about and be better at applying in their texts.

For the theme *reading to write*, five students felt they had to "read more" (P11) relevant "literature" (P04) "before initiating writing" (P03) to be able to "generate ideas" (P05). Even though the elicitation task focused only on their writing abilities, the students brought up reading as an essential precondition in the process towards writing good quality academic texts.

4.3.2. Areas beyond English academic writing

As presented in Table 4.3, the findings showed the need for software assistance in academic writing in two students' responses: "reference manager applications" (P08) and "technology to make writing tasks easier" (P10). In doctoral education, research students are expected to become autonomous scholars who can independently disseminate their ideas in publications in an internationally acceptable academic manner. Moreover, they are expected to be able to evaluate the quality of their own texts as well as those published by other scholars critically. Therefore, using technology may not help students much in developing their ability to critically engage with academic writing and literature directly; however, as these students mentioned, technology can be a useful tool in the process of producing academic works. It is also notable that not many students came up with ideas of depending on technology to enhance their academic writing skill.

Table 4.3 Theme external to the construct of English academic writing abilities

Themes / Participants	**P01**	**P02**	**P03**	**P04**	**P05**	**P06**	**P07**	**P08**	**P09**	**P10**	**P11**	**P12**	**P13**
	F	**F**	**M**	**F**	**F**	**M**	**F**	**F**	**F**	**F**	**F**	**F**	**M**
	Y-2	**Y-3**	**Y-2**	**Y-2**	**Y-1**	**Y-2**	**Y-1**	**Y-1**	**Y-2**	**Y-2**	**Y-1**	**Y-2**	**Y-1**
Use of IT/ Software								✓		✓			

4.4. Discussion

The findings of this exploratory study revealed valuable insights into the areas for improvement in non-English-speaking international doctoral students' EAW. The identified themes, encompassing a range of different aspects in EAW, provide a nuanced understanding of the challenges these students face when they write academic texts. This section discusses the findings by drawing connections to previous research and theoretical frameworks.

The prominence of the genre as a concern among students aligns with the observations made by Aitchison et al. (2012) and Lei & Hu (2019). The desire expressed by students, such as P05 and P10, to learn specific genres like review papers underscores the importance of genre awareness in academic writing (Jafari et al., 2018). P08's struggle to adhere to academic conventions reflects the need for targeted interventions to enhance genre-specific writing skills as discussed in the literature (Hyland & Shaw, 2016; Johns & Swales, 2002; Swales & Freak, 2012).

It was also found that students recognized the pivotal role of presenting their ideas in a coherent manner. This acknowledgment emphasizes the students' awareness of the importance of structuring their texts in a way that ensures logical connections between ideas and maintains the overall flow of their academic discourse. This outcome is also in line with previous publications (Jafari, et al., 2018; Odena & Burgess, 2017; Ramírez-Castañeda, 2020).

The theme of conciseness echoes the findings of Jafari et al. (2018), indicating a recurrent issue in NNES academic writing. The response from P02 sheds light on the influence of cultural practices on writing styles, emphasizing the complexity of addressing conciseness as a skill. This complexity highlights the necessity for tailored interventions aimed at cultivating precision in academic paper writing, as emphasized in the work of Ma (2019) and other researchers (Almatarneh et al., 2018; Jalongo et al., 2014).

The acknowledgment of citation and referencing challenges also aligns with the literature, emphasizing the critical role these elements play in academic writing (Jomaa & Bidin, 2017). The specific mention of APA style by P10 highlights the need for targeted training in citation conventions, a crucial aspect of academic literacy (Huwari & Al-Shboul, 2015; Langum & Sullivan, 2017).

The recognition of limited writing practices among students resonates with the literature emphasizing the importance of regular and systematic writing practice (Aitchison et al., 2012). P02’s retrospective realization further underscores the value of early exposure to academic writing, indicating potential gaps in the students' prior academic experiences (Lei & Hu, 2019).

The theme of turning knowledge into texts aligns with the multifaceted nature of academic writing skills highlighted in the literature (Almatarneh et al., 2018; Hyland & Shaw, 2016; Odena & Burgess, 2017). P06’s struggle to articulate their thoughts emphasizes the need for interventions that bridge the gap between knowledge acquisition and effective communication in writing.

The desire to expand vocabulary, particularly in academic and technical terms, corresponds to the findings of Mohammad Almatarneh et al. (2018). The interconnectedness of vocabulary and idea development underscores the need for holistic language development programs addressing multiple linguistic dimensions (Rezaei & Seyri, 2019).

Students' concerns about the flow of ideas and idea development align with the literature emphasizing the interconnectedness of effective idea development and the overall coherence of academic writing (Chatterjee-Padmanabhan & Nielsen, 2018; González-Ocampo & Castelló, 2018). P02's struggle highlights the challenge of balancing form and meaning, pointing towards potential pedagogical strategies that prioritize both aspects simultaneously.

The recognition of the audience's role in academic writing emphasizes students' awareness of the need to tailor their writing to meet the expectations of specific readerships. This aligns with the broader literature highlighting the rhetorical nature of academic discourse (Hyland, 2008). Moreover, this finding indicates that EAW at the doctoral-scholar level is highly social-oriented as it has targeted audiences in their respective academic communities (Duff, 2008; Hyland, 2018).

The acknowledgment of paraphrasing challenges reflects the findings of previous studies (Almatarneh et al., 2018; Bachiri & Oifaa, 2020; Xu & Zhang, 2019) . P02's explicit desire for training indicates a need for targeted interventions addressing paraphrasing skills, an essential aspect of academic integrity and writing proficiency.

The expressed need for improving knowledge of research methodology is in line with the broader understanding that effective academic writing is inseparable from research competence (Ramírez-Castañeda, 2020). The students' recognition of the interconnectedness of language and content reflects a sophisticated understanding of the academic writing process (Badenhorst & Xu, 2016; Jomaa & Bidin, 2017; Kotamjani et al., 2018).

The emphasis on grammatical accuracy resonates with the literature highlighting the role of linguistic competence in academic writing (Jafari et al., 2018; Lin & Morrison, 2021). The specificity of concerns, such as punctuation and sentence construction, points towards targeted linguistic interventions.

The acknowledgment of the pivotal role of reading in the writing process aligns with the established literature, as it emphasizes the reciprocal relationship between reading and writing (Aitchison et al., 2012; Jomaa & Bidin, 2017; Kotamjani et al., 2018). The students' recognition of the need to consult the literature before writing indicates a sophisticated understanding of the research-writing nexus.

Therefore, the findings of this study contribute to a deeper understanding of NNES doctoral students' needs in EAW. The themes identified underscore the multifaceted nature of academic writing skills, emphasizing the interconnectedness of linguistic proficiency, genre awareness, and strategic competencies. The nuanced insights provided by the students shed light on their self-awareness and highlight potential areas for targeted pedagogical interventions in EAW programs.

4.5. Conclusions

Researchers such as stated that NNES novice writers might find it difficult to meet all the EAW demands at the doctoral level. The findings of this study also documented that the

participants were fully aware of their needs to familiarize themselves with the academic literary conventions to demonstrate disciplinary expertise in their texts.

The participants, representing diverse educational backgrounds across seven countries, shared a common understanding that their academic writing skills in English as their additional language required further refinement to effectively communicate their research findings at the required level. This collective awareness emphasizes the need for ongoing development in specific aspects of EAW skills to meet the rigorous standards of disseminating research findings. The study highlights the interconnectedness of various EAW aspects and reinforces the demanding nature of writing academic texts at the advanced level (Jeyaraj, 2020; Walter & Stouck, 2020; Wang & Parr, 2021).

The findings underscore the simultaneous application of multiple skills and emphasize the necessity for structured EAW instruction to address challenges faced by international students. By recognizing these findings, stakeholders in doctoral programs can enhance support systems and curricular offerings to facilitate PhD students' academic success in their EAW endeavors. The study also affirms the complex nature of EAW development, indicating the interconnected factors of academic English lexical knowledge, grammar command, syntactical structures, accurate paraphrasing, coherent presentation of ideas, writing literature reviews, conducting research, and comprehension of discipline-specific texts, as found in literature (Hyland & Shaw, 2016; Johns, 2011; Swales, 2019). The participants' responses revealed that their abilities in presenting ideas, paraphrasing, and translating thoughts into texts were influenced by their proficiency in vocabulary, grammar, and understanding academic writing conventions, including citation and referencing skills. The reliance on academic reading for better writing was also emphasized. In conclusion, the findings of the study are consistent with the most frequently documented outcomes in the selected studies (Chapter 2) and pave the way for a large-scale survey presented in Chapter 5.

CHAPTER 5. A LARGE-SCALE QUANTITATIVE STUDY OF NNES DOCTORAL STUDENTS' EAW EXPERIENCES

Chapter 5 focuses on the quantitative survey, and it comprises seven sections. The first one is the introduction. In the second section, the aims are articulated, outlining the specific focus of the investigation. The third section describes the research methodology, encompassing details on research questions, participants, research instrument and the data analysis process. The fourth section presents the results derived from the data analysis. In the fifth section, a thorough discussion of the findings is presented linking the results to the critical overview of the literature in chapter 2 and the qualitative exploratory study presented in chapter 4. Finally, the last section highlights the key findings of the study, how they relate to previous research, and what the limitations are.

5.1. Introduction

In the realm of doctoral studies, novice student-writers of NNES backgrounds often encounter challenges as they strive to write their doctoral texts at the expected academic level (Badenhorst & Xu, 2016; Jomaa & Bidin, 2017; Lin & Morrison, 2021; Odena & Burgess, 2017; Wang & Parr, 2021; Xu & Zhang, 2019). The literature emphasizes the intricate nature of these challenges, including vocabulary, grammar, critical thinking, and emotional aspects (Aitchison et al., 2012; Almatarneh et al., 2018; Chatterjee-Padmanabhan & Nielsen, 2018; Jomaa & Bidin, 2017; Lin & Morrison, 2021; Odena & Burgess, 2017). Understanding these challenges is crucial for creating effective interventions and promoting sustainable academic success for international doctoral students.

This survey aims to contribute to this understanding by investigating NNES doctoral students' self-perceived abilities in their pursuit of EAW excellence. Building upon the insights gained in the previous chapters on the literature and the qualitative study, this chapter examines a range of interconnected factors, including English academic reading, research knowledge and abilities, the quality of feedback students received, their ability to manage emotions, and motivational factors that influence EAW during the PhD journey. By investigating these aspects, the study seeks to develop a deeper understanding of the complex relationships among self-perceived English academic abilities, feedback, emotional management, and motivational factors in NNES doctoral students' lived experiences and how they contribute to their EAW over time. As no previous study has investigated the relationships of EAW with these specific factors via a quasi-longitudinal study, this research is innovative in this regard. Additionally, conducted in Hungary, where no similar research has been undertaken despite English serving as a lingua franca for both faculty and students, this study addresses a significant gap in the literature by examining NNES doctoral students' EAW experiences of and the factors influencing their EAW in this distinctive setting.

5.2. Aims of study

This survey aims to investigate how NNES doctoral students perceive their abilities in English academic reading (EAR), English academic writing (EAW), and conducting

research. The study examines two significant points in students' trajectories: the commencement of their PhD studies and the current stage of their doctoral journey. By closely analyzing the self-perceived abilities of the participants at both stages, the study aims to assess the development of their EAW, and research skills during their PhD studies.

In addition to evaluating the participants' self-perceived abilities, the study examines several interconnected factors identified in the literature and the exploratory study: these include the perceived quality of feedback participants received, the ability to cope with emotions, and the factors that influence their motivation when confronted with the demands of EAW during the PhD journey. By investigating these aspects, the survey aims to draw a clear picture of the complex relationships among participants' self-perceived English academic abilities, their knowledge of their research areas and methodology, ability to manage their emotions and motivation, and the role feedback from various stakeholders.

5.3. Method

5.3.1. Research questions

The following research questions guided the large-scale quantitative study:

1. How do NNES doctoral students perceive their English literacy at the starting point (ELS) of their PhD journey?
    i. How do their ELS self-perceptions compare along their gender, level of English proficiency exams (C2, C1, B2), and across different academic years (1st-, 2nd- ,3rd-, and 4th- year PhD students, and 4+ years PhD students)?
2. How do they perceive their English academic writing (EAW) abilities?
    i. How do they self-assess their EAW abilities at the start of their PhD studies?
    ii. How do they perceive their EAW abilities at their current stage of their PhD studies?
    iii. How do datasets compare in their self-perceived EAW abilities between the start of their PhD studies and the stage where they are when they respond?
    iv. How do their EAW self-perceptions compare along their gender, level of English proficiency exams, and across different academic years?
3. How do they perceive their English academic reading (EAR) abilities?
    i. How do their EAR self-perceived abilities compare according to gender, their level of English documented proficiency, and across different academic years?
4. How do they perceive their research knowledge and abilities in carrying out their doctoral research tasks?
    i. How do they perceive their research knowledge and abilities at the start of their PhD studies?
    ii. How do they assess their research knowledge and abilities at their current stage of PhD studies?
    iii. How do datasets compare in their self-perceived research knowledge and abilities between the start of their PhD studies and the stage where they are when they respond?

iv. How do their self-perceptions compare along their gender, level of English proficiency exams and across different academic years?

5. How do they perceive the quality of feedback received from supervisors, tutors, and peers?
    i. How do their self-perceptions compare along their gender, level of English proficiency exams and across different academic years?
6. How do they perceive their abilities to cope with emotions doing their English academic writing tasks?
    i. How do their self-perceptions compare along their gender, level of English proficiency exams and across different academic years?
7. How do they perceive their EAW autonomy, EAW competence, and the support they receive from their respective doctoral schools regarding EAW?
    i. How do their self-perceptions compare along their gender, level of English proficiency exams and across different academic years?
8. What is the relationship between initial English literacy, English academic writing abilities at the start and present, English academic reading abilities, research knowledge at the start and present, the ability to cope with emotions, motivational factors, and feedback from peers and tutors?
9. How do the students' initial English literacy, English academic writing abilities at the start, English academic reading abilities, research knowledge at the start and present, the ability to manage emotions and motivation, and feedback influence their English academic writing abilities?

5.3.2. Participants

The survey included seven questions related to the participants' sociodemographic characteristics. They covered their gender, academic year they were in when filling in their answers, their age, the level of their documented English proficiency exam (B2, C1, C2, Council of Europe, 2020), university, first language, country of origin, and PhD program. The details of the descriptive statistic results for gender, academic year during participation, age, English proficiency level, university, first language, country of origin and doctoral program are presented in Tables 5.1, 5.2., 5.3. and 5.4., respectively.

Table 5.1 Sociodemographic characteristics of the participants (N=255) in the survey

Baseline characteristics	**Frequency**	**%**
Gender		
Female	125	49
Male	127	49.8
Not stated	3	1.2
Academic year		
First-year PhD	93	36.5
Second-year PhD	64	25.1
Third-year PhD	46	18

Fourth-year PhD	43	16.9
Four+ years	5	2
Incomplete answer	4	1.6
Age range		
23-25	12	4.7
26-30	86	33.7
31-35	94	36.9
36-40	33	12.9
41-45	23	9
46-50	4	1.6
51-55	2	0.8
Not stated	1	0.4
English proficiency level		
C2	22	8.6
C1	118	46.3
B2	115	45.1
University		
Budapest University of Technology and economics	19	7.5
Corvinus University of Budapest	2	0.8
Eötvös Loránd University	52	20.4
Hungarian University of Agriculture and Life Sciences	19	7.5
Óbuda University	3	1.2
Pázmány Péter Catholic University	3	1.2
Széchenyi István University	2	0.8
University of Pannonia	13	5.1
University of Debrecen	28	11
University of Miskolc	4	1.6
University of Pécs	18	7.1
University of Public Service	1	0.4
University of Sopron	5	2
University of Szeged	85	33.3
Incomplete answer	1	0.4

Table 5.2 First languages of the 255 participants

	First language	Frequency	%		First language	Frequency	%
1	Afaan Orom	4	1.6	26	Lao	2	0.8
2	Akan	3	1.2	27	Manadonese	1	0.4
3	Albanian	3	1.2	28	Modern Greek	1	0.4
4	Amazigh	1	0.4	29	Mongolian	8	3.1
5	Amharic	1	0.4	30	Nabt	1	0.4

6	Arabic	65	25.9	31	Malayalam	1	0.4
7	Azerbaijani	4	1.6	32	Oromigna	1	0.4
8	Bahasa	24	9.4	33	Oshiwambo	1	0.4
9	Bantu	1	0.4	34	Persian	6	2.4
10	Bengali	5	2	35	Portuguese	6	2.4
11	Burmese	9	3.5	36	Romanian	1	0.4
12	Cebuano	1	0.4	37	Russian	3	1.2
13	Chinese	10	3.9	38	Serbian	2	0.8
14	Ekegusii	1	0.4	39	Spanish	9	3.5
15	French	1	0.4	40	Swahili	6	2.4
16	German	1	0.4	41	Tajik and Uzbek	1	0.4
17	Hausa	6	2.4	42	Tavoyan	1	0.4
18	Hindi	4	1.6	43	Tigrigna	4	1.6
19	Hungarian	24	9.4	44	Tunisian Arabic	2	0.8
20	Igbo	2	0.8	45	Turkish	4	1.6
21	Javanese	1	0.4	46	Twi	2	0.8
22	Kazakh	1	0.4	47	Ukrainian	1	0.4
23	Kikuyu	1	0.4	48	Urdu	3	1.2
24	Kiswahili	3	0.8	49	Vietnamese	10	3.9
25	Kurdish	2	0.8				

Table 5.3 Participants' countries of origin

	Country	**Frequency**	**%**		**Country**	**Frequency**	**%**
1	Albania	1	0.4	26	Mexico	2	0.8
2	Algeria	7	2.7	27	Mongolia	8	3.1
3	Azerbaijan	3	1.2	28	Montenegro	1	0.4
4	Bangladesh	4	1.6	29	Morocco	2	0.8
5	Brazil	6	2.4	30	Myanmar	9	3.5
6	China	10	3.9	31	Namibia	1	0.4
7	Colombia	1	0.4	32	Nigeria	8	3.1
8	Ecuador	5	2	33	Pakistan	3	1.2
9	Egypt	2	0.8	34	Palestine	4	1.6
10	Eritrea	3	1.2	35	Philippines	1	0.4
11	Ethiopia	7	2.7	36	Moldova	1	0.4
12	Germany	1	0.4	37	Turkey	4	1.6
13	Ghana	6	2.4	38	Russia	2	0.8
14	Greece	1	0.4	39	Serbia	3	1.2
15	Hungary	23	9	40	South Africa	1	0.4
16	India	6	2.4	41	Sudan	5	2
17	Indonesia	26	10.2	42	Syria	16	6.3
18	Iran	7	2.7	43	Tanzania	3	1.2

19	Iraq	7	2.7	44	Tunisia	7	2.7
20	Jordan	16	6.3	45	Ukraine	1	0.4
21	Kazakhstan	2	0.8	46	Uruguay	1	0.4
22	Kenya	8	3.1	47	Uzbekistan	1	0.4
23	Kosovo	2	0.8	48	Vietnam	10	3.9
24	Laos	2	0.8	49	Yemen	2	0.8
25	Lebanon	2	0.8		Not stated	1	0.4

Table 5.4 Doctoral programs participants studied in

	Program	**f**	**%**		**Program**	**f**	**%**
1	Adult learning and education	1	0.4	34	History	6	2.4
2	Agriculture and life sciences	1	0.4	35	Horticultural sciences	2	0.8
3	Allergy and immunology	1	0.4	36	Immunology and biotechnology	1	0.4
4	Animal science	5	2	37	Informatics	4	1.6
5	Applied Linguistics	12	4.7	38	Information science and technology	1	0.4
6	Architectural engineering	6	2.4	39	International relations and political science	1	0.4
7	Architecture	4	1.6	40	Landscape architecture and landscape ecology	1	0.4
8	Bioinformatics and microbiology	1	0.4	41	Language pedagogy and applied linguistics	4	1.6
9	Biology	9	3.5	42	Law and political sciences	4	1.6
10	Biology and environmental sciences	2	0.8	43	Legal studies	2	0.8
11	Biomedical science	1	0.4	44	Linguistics	12	4.7
12	British and American Studies	1	0.4	45	Literary and cultural studies	2	0.8
13	Business administration	1	0.4	46	Literary studies	3	1.2
14	Business and management	2	0.8	47	Management and business	2	0.8
15	Chemistry	2	0.8	48	Material Science and engineering	1	0.4
16	Chemistry and Chemical Technology	1	0.4	49	Material sciences and technologies	2	0.8
17	Civil engineering and earth science	4	1.6	50	Mathematics	2	0.8
18	Computer Science	8	3.1	51	Mechanical engineering	5	2
19	Crop Production Sciences	2	0.8	52	Medicine	4	1.6
20	Earth sciences	2	0.8	53	Multidisciplinary medical science	1	0.4
21	Economic and Financial Policy	1	0.4	54	Multilingualism	12	4.7
22	Economic and regional sciences	14	5.5	55	Pharmaceutical sciences	8	3.1
23	Education	43	16.9	56	Philology	1	0.4
24	Educational theory research	1	0.4	57	Philosophy	2	0.8
25	Electrical Engineering	3	1.2	58	Physics	3	1.2
26	Engineering	7	2.7	59	Plant Science/Plant Protection	1	0.4
27	Engineering and Information Technology	1	0.4	60	Psychology	1	0.4
28	Environmental sciences	8	3.1	61	Public administration sciences	1	0.4
29	Festetics	1	0.4	62	Sociology	3	1.2
30	Food science	3	1.2	63	Teacher education and higher education	2	0.8

31	Forestry and wildlife management	3	1.2	64	Transportation and vehicle engineering	4	1.6
32	Geosciences	2	0.8	65	Wood science and technology	1	0.4
33	Health Sciences	3	1.2				

Note. f= frequency

5.3.3. Data collection instrument

The present study aims to investigate the interconnectedness of various factors related to NNES doctoral students' academic writing abilities in English. These factors include self-perceived English literacy at the starting point, EAR abilities, EAW abilities both at the start and now, abilities in conducting research at the start and now, perceived quality of feedback received, coping with emotions, and factors that positively influence motivation while dealing with EAW throughout the PhD journey. These constructs are based on the findings of the literature review (presented in section 2.4) and the exploratory study (presented in section 4.1).

The survey (see Appendix B) consists of 87 self-assessed statements, presented on a 6-point Likert scale (1=strongly disagree, 2=disagree, 3=slightly disagree, 4=slightly agree, 5=agree, 6=strongly agree) to avoid neutral responses, following the advice of Dörnyei and Dewaele (2022).

After designing the survey, three experts in educational research acted as test takers and reviewed the items and the rubrics. Following the experts' suggestions, all the necessary grammatical and lexical corrections were made in order to avoid ambiguity and confusion. After submitting the revised version, these experts confirmed that the survey items effectively measure the intended constructions and are aligned with the purpose of the survey.

5.3.3.1. Reliability

To assess the reliability of the instrument, Cronbach's Alpha (α) was utilized. The guidelines proposed by Cronbach (1951) and Hair et al. (2017) were followed to evaluate the internal consistency. According to these guidelines, an α value of ≥ .9 is considered excellent, a value ranging from .9 to .8 is good, from .8 to .7 is acceptable, from .7 to .6 is questionable, from .6 to .5 is poor, and a value below .5 is deemed unacceptable. These criteria are used to determine the reliability of the instrument.

The first construct, English literacy at the start of PhD studies (ELS), included three items. However, the reliability coefficient (α) of .581 indicated that it fell below the acceptable threshold. To improve its reliability, one item that showed a weak relationship with the other two items was removed. This resulted in a revised construct with two items (ELS, 2 items, α = .817). The second construct, EAW abilities at the start of PhD studies (EAWS), consisted of 17 items and exhibited a high reliability coefficient (α =.942). The third construct, research knowledge and abilities at the start of PhD studies (RS), was composed of seven items and demonstrated a reliable α value of .924. The fourth construct, English academic reading abilities (EAR), consisted of seven items and displayed a good level of internal consistency (α = .820). The fifth construct, EAW abilities now/at the current point of PhD studies

(EAWN), comprised 22 items and showcased excellent reliability (α = .979). The sixth construct, research knowledge and abilities now/at the current stage in PhD studies (RN), comprised 7 items and it also demonstrated a very high α value of .948.

Originally, there were three different constructs related to feedback: (i) feedback from teachers, who are their thesis advisors and tutors of doctoral courses, (ii) feedback from peers and (iii) attitudes towards feedback. However, the analysis revealed a very low α value of .321 for the construct – "attitudes towards feedback", comprising six items focused on students' attitudes towards feedback. As this low value signifies inadequate internal consistency, this third sub-construct was considered unfit for inclusion in the study and was subsequently excluded from further analysis. Therefore, only teachers' feedback (TFEED) and peer feedback (PFEED) were kept as the seventh and eighth constructs; they both demonstrated excellent reliability – TFEED (7 items; α= .888) and PFEED (2 items; α= .920).

The ninth construct, abilities to cope with emotions (EMO), comprised 2 items and showed good reliability (α = .788). The tenth construct, what influenced students' motivation while dealing with EAW throughout the doctoral writing journey (MOTI), initially included nine items. However, it displayed a low α value of .643. To enhance its reliability, four items with poor inter-item relationships were eliminated. The revised construct consisted of five items (MOTI, 5 items, α = .789).

In sum, after the elimination of unfit items, the reliability analysis of the measurement instrument demonstrated that the constructs in this study met the reliability requirements, as Cronbach's Alpha (α) values ranged from .788 to .979, showing reliable internal consistency. These findings indicate that the items within each construct were strongly correlated and consistently measured the intended constructs and enhanced the validity and reliability of the collected data and the analyses of the dataset.

5.3.3.2. Validity

To assess the instrument's construct validity, a confirmatory factor analysis (CFA) was conducted, following the guidelines of Furr (2021). CFA is recommended when researchers possess a thorough understanding of the scale, encompassing variables or factors, item correlations, and factor interrelationships. The Kaiser-Meyer-Olkin (KMO) test resulted in a value of .933, indicating high suitability for factor analysis. The test of sphericity yielded a p-value of <.001, further supporting the adequacy of factor analysis. In CFA, the fitness indices have specific cutoff values for acceptability: $\chi 2$ should be insignificant; TLI, and CFI should be ≥ .90; and SRMR and RMSEA should be ≤ .10 (Tabachnick & Fidell, 2018). In this study, the goodness of fit was achieved with X2/df < 5, RMSEA < .08, CFI and TLI > .90, SRMR < .08, and nearly the smallest AIC and BIC values.

To assess the convergent validity of the constructs, I employed the Average Variance Extracted (AVE) and Composite Reliability (CR) measures. According to George and Mallery (2021), Hair et al (2017), and Kline (2016), AVE values should exceed .5 for each

composite construct, while the acceptable range for CR is typically between .70 and .80, with values above 0.80 considered good, and values above .90 considered excellent. The results revealed that the AVE values in the study ranged from .857 to .981, exceeding the recommended threshold of .5 for all constructs. Additionally, the CR values ranged from .729 to .923, indicating satisfactory reliability across the constructs. Based on these findings, the study demonstrates strong convergent validity, as evidenced by the high AVE values and the acceptable range of CR values. Based on these results, the measures used in the study reliably capture the underlying constructs and their relationships, providing confidence in the convergent validity of the research instrument (see Table 5.5).

Table 5.5 Reliability and validity indicators of the self-assessed constructs

Variables	Cronbach's alpha	CR	AVE
English literacy at start of PhD studies (ELS)	.817	.920	.852
English academic writing at start of PhD studies (EAWS)	.942	.950	.532
Research knowledge at start of PhD studies (RS)	.924	.940	.693
English academic reading (EAR)	.820	.886	.617
English academic writing now (EAWN)	.979	.981	.701
Research knowledge now (RN)	.948	.958	.767
Teachers' feedback (TFEED)	.888	.913	.570
Peer feedback (PFEED)	.920	.962	.926
Coping with emotions (EMO)	.788	.904	.825
Motivation (MOTI)	.789	.857	.546

5.3.4. Data collection procedure

The survey started by asking for voluntary participation, assuring participants that their data would be anonymously coded and used solely for research purposes to inform stakeholders. The researcher's contact information, including affiliation and email address were transparently provided for participants to reach out if necessary. The survey was available from 2/21/2022 to 12/7/2022 and was distributed through PhD students' forums, international students' groups, and advertised in the Stipendium Hungaricum newsletter.

5.3.5. Data analysis

A range of statistical analyses were performed to gain insights from the data following the literature (Hair et al., 2017; Tabachnick & Fidell, 2013). To investigate the students' perceptions of each survey statement (Loeb et al., 2017), descriptive analyses were employed. Independent samples t-tests were conducted to compare the responses between genders. Paired samples t-tests were utilized to assess the changes in perceived abilities from the start

to the current stage of the PhD journey. Furthermore, one-way ANOVA was used to compare the student groups defined by them on level of English proficiency, academic years, and age groups.

To explore the relationships between variables, correlation analyses were carried out. Correlation analysis provides insights into the strength and direction of relationships between variables, enabling researchers to understand the associations among different variables in the study. However, correlation coefficients alone do not provide information about predictive power. Hence, regression analysis was performed to evaluate the predictive relationships between variables. This analysis aimed to identify the significant contributors to the variance in EAWN and determine the most influential factors in the study (Hair et al., 2017; Tabachnick & Fidell, 2013).

5.4. Results

This section presents the quantitative analysis results of the survey, addressing research questions RQ1 to RQ9.

5.4.1. Students' self-assessments of their English literacy

To address RQ1, statistical analyses were conducted to investigate students' self-perceptions regarding the statements provided. Additionally, differences among various groups such as gender, three levels of English proficiency examinations (C2, C1, and B2), and age groups were further explored. The results indicated no significant differences among age groups. Consequently, the detailed findings of the analyses, excluding the comparison among age groups, are presented below.

5.4.1.1. Students' self-assessments of English literacy at the start of their PhD studies

The analysis of students' self-assessed scores revealed that they generally agreed with both statements (ESL1 and ESL2); notably, they expressed a high level of agreement regarding their ability to *comprehend English academic texts* (see Table 5.6).

Table 5.6 Students' self-assessments of their English literacy at start of their PhD studies (ELS)

		M	SD
ELS1	My general English proficiency was at advanced level.	4.70	1.21
ELS2	I could comprehend English academic texts well.	5.06	1.01

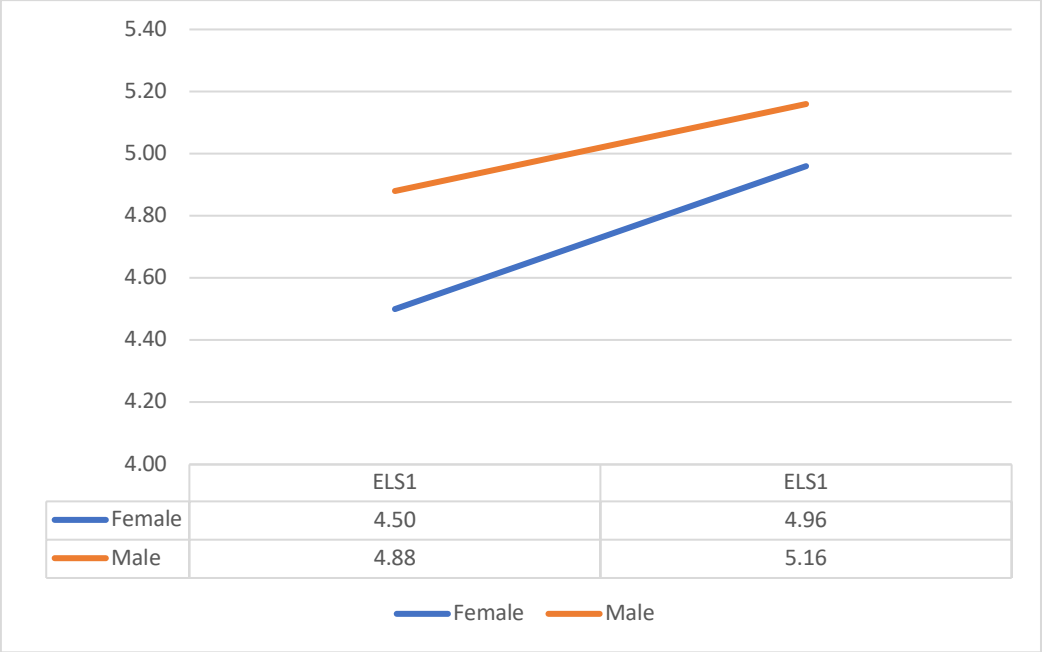
5.4.1.2. Gender difference in ESL self-assessments

The statistical analysis of the data highlights distinct variations in self-assessed English language proficiency in male and female students' responses (Figure 5.1). Specifically, male students achieved higher self-assessment scores in comparison to their female counterparts.

To ascertain the significance of these observed disparities, an array of independent samples t-tests was performed.

As a result, it becomes apparent that male students gave higher self-assessed scores in comparison to their female peers. Independent samples t-tests showed that there is a significant difference ($p < 0.05$) between the means in the evaluation of English proficiency level (ELS1). Specifically, when assessing their self-perceived English proficiency, male students received a mean score of 4.88, which was significantly higher than the female students' mean score of 4.50 ($p < 0.05$). However, in terms of comprehending English academic texts, the gender difference was not statistically significant (female: 4.96 vs. male: 5.16, $p > 0.05$). These findings underscore the variation in self-assessed English proficiency among male and female students, particularly in relation to their overall English proficiency, suggesting that men tend to rate their proficiency higher than women.

Figure 5.1 Gender differences in ELS self-assessments



5.4.1.3. Differences among the ESL self-assessments of C2, C1 and B2 groups

As a next step, the disparities among the C2, C1, and B2 proficiency levels were investigated. In the survey, the self-assessed statements were measured on a 1 to 6 Likert scale. Hence, a mean score falling between 5 and 6 indicated a strong agreement. The findings showed that only C2 and C1 students agreed strongly that their general English proficiency was at an advanced level. The highest self-assessed scores were observed in the C2 group, followed by respondents with C1-level proficiency group. Conversely, B2 students displayed a self-assessed score of 3.94, indicating agreement rather than strong agreement with the statement. Similarly, when evaluating their ability to comprehend academic texts, C2 students obtained the highest self-assessed score, followed by C1, and then B2 with the lowest score (Figure 5.2). Consequently, one-way ANOVA tests were conducted, confirming statistically significant differences among the groups. Subsequently, multi-comparison tests utilizing

Tukey's Honestly Significant Difference (HSD) tests were performed. They revealed that the mean score of C2 was significantly higher than means for both C1 and B2. Similarly, C1's mean score was significantly higher than that of students who had passed a B2 English proficiency exam (see Table 5.7).

Figure 5.2 ELS self-assessments of C2, C1 and B2 groups

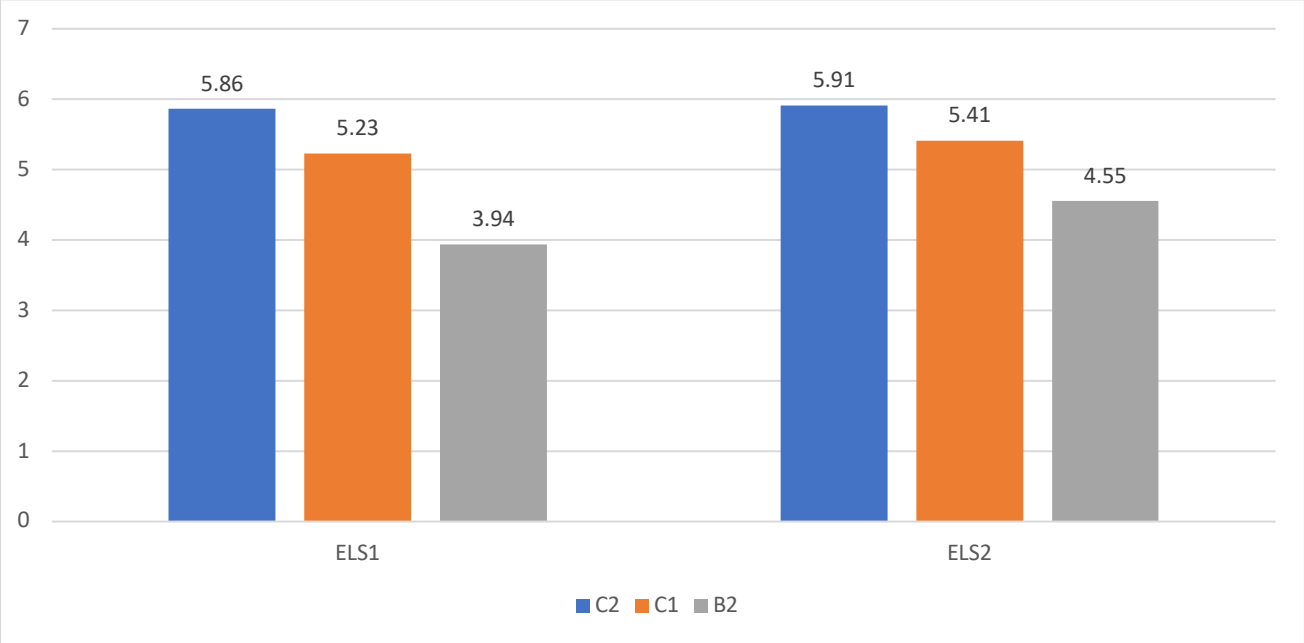


Table 5.7 Significant differences among the ELS self-assessments of C2, C1 and B2

	Mean Difference (I-J)	S. E	p	95% CI Lower	95% CI Upper
My general English proficiency was at advanced level. (ELS1)					
I (C2) vs. J (C1)	.635*	0.229	0.016	0.100	1.170
I (B2) vs. J (C2)	-1.925*	0.229	0.000	-2.460	-1.380
I (B2) vs. J (C1)	-1.290*	0.129	0.000	-1.590	-0.990
I could comprehend English academic texts well. (ELS2)					
I (C2) vs. J (C1)	.5023*	0.2052	0.040	0.018	0.986
I (C2) vs. J (B2)	1.3613*	0.2056	0.000	0.876	1.846
I (B2) vs. J (C2)	-1.3613*	0.2056	0.000	-1.846	-0.876
I (B2) vs. J (C1)	-.8590*	0.1158	0.000	-1.132	-0.586

Note. * $p < 0.05$. CI = Confidence Interval.

5.4.2. Students' self-assessments of their EAW abilities

This section provides an analysis of the students' perceptions regarding their abilities in EAW at the commencement of their PhD program and at their current stage. Furthermore, it offers a

comparative evaluation of their self-assessments between the initial stage and the present point. However, no significant difference was observed among different age groups. Hence, the subsequent sections present the disparities between genders, proficiency groups (C2, C1, and B2), and academic years.

5.4.2.1. Students' self-assessments of EAW abilities at the start of their PhD studies

As shown in Table 5.8, the highest mean score was found on the item about knowing *how to write a literature review in English (*M=4.48, SD=1.32). Students also believed that they knew *how to write a research paper in English* (M=4.23, SD=1.56) when they started their doctoral studies. In line with those self-assessments, the responses also reflect that they *had experience in English academic writing* (M=4.44, SD=1.51). They agreed that they were familiar with *guidelines like APA or MLA* (M=4.12, SD= 1.58) and *citing and referencing sources* (M=4.14, SD=1.58). Therefore, there is a consistency in their self-assessed scores for writing *a literature review* and *a research paper* and having *experience in English academic writing*. Students' highest self-assessed mean score concerned writing *a literature review* at the start; therefore, it can be inferred that they must have already had experience in writing a literature review before they applied to a PhD program. Although participants came from very different educational backgrounds, one thing was in common for them: they all had at least a master's degree, as it is a prerequisite to PhD entry in Hungary. As a literature review is a required chapter in a thesis, I conclude that their highest self-assessed scores for writing a *literature review* were based on their previous experience. This point explains the high mean scores on the two statements about citations at the start (*I was familiar with guidelines like APA or MLA; citing and referencing sources*).

Students were also confident about their linguistic and discourse competences: especially about *grammar* (M=4.06, SD=1.48) and *writing paragraphs* (M=4.16, SD= 1.44). The highest mean score was found on the item claiming that they *could write* so *that their audience understood the meaning clearly* (M=4.75, SD=1.09). They also believed that their *vocabulary was good enough for writing course assignments* (M=4.16, SD=1.47). On the rest of the items in Table 5.8, students' self-assessed mean scores ranged from 3.55 to 3.98 (SD between 1.39 to 1.55), indicating that they agreed with the given statements to a lesser degree on the 6-point Likert scale. The lowest self-assessed mean score was found for the item *being critical* (M=3.55, SD= 1.53).

Another key finding was that lower self-assessed scores were found on the items which required linguistic and discourse competence, and a high level of critical reasoning (*paraphrasing texts*; *organizing paragraphs*; *presenting ideas logically*; *summarizing key points*; *drawing conclusions*; *being critical*), whereas higher self-assessed scores were found on the items that do not rely on critical thinking, but mostly linguistic and discourse competence (*vocabulary for writing course assignments*; *grammar*; *writing paragraphs*; *citations and references*; *ability to write so that the audience understood the meaning clearly*). Overall, the self-assessed scores show (Table 5.8) that students were quite confident about their English academic writing abilities at the beginning of their PhD studies, although the SD data indicate meaningful differences.

Table 5.8 Students' EAW self-assessments at the start of their PhD studies

	English academic writing abilities at the start (EAWS)	M	SD
EAWS1	My special English vocabulary was not good enough to write my course assignments.	4.16	1.47
EAWS2	I knew how to write a literature review in English.	4.48	1.32
EAWS3	I did not know how to write a research paper in English.	4.23	1.56
EAWS4	I was familiar with guidelines like APA or MLA.	4.12	1.58
EAWS5	I had no experience in English academic writing.	4.44	1.51
EAWS6	I could write so that my audience understood the meaning clearly.	4.75	1.09
	At the beginning of the program, when I wrote in English, I had no difficulties with		
EAWS7	paraphrasing texts	3.78	1.55
EAWS8	citing and referencing sources	4.14	1.58
EAWS9	organizing paragraphs	3.96	1.50
EAWS10	grammar	4.06	1.48
EAWS11	special vocabulary	3.60	1.43
EAWS12	writing paragraphs	4.16	1.44
EAWS13	presenting ideas logically	3.93	1.42
EAWS14	stating problems clearly	3.80	1.43
EAWS15	summarizing key points	3.97	1.47
EAWS16	drawing conclusions	3.98	1.39
EAWS17	being critical	3.55	1.53

5.4.2.2. Students' self-assessments of their EAW abilities at the current point of their PhD studies

As Table 5.9 shows, the mean scores for the self-assessed items at the current point of studies tended to be higher, whereas the SD data were lower (means ranged between 4.25 and 5.02, standard deviations ranged between 0.94 and 1.14). Therefore, the results revealed that students agreed with all the statements to a high extent. The item on *citing and referencing sources* received the highest mean score (M=5.02, SD=0.96) and the self-assessed score for *using guidelines like APA or MLA* was also high (M=4.82, SD=1.20), indicating that students' self-assessments were consistent. Respondents agreed with all the statements to a large degree, except for the item *Errors are rare in my texts* which received the lowest mean score (M=4.25, SD=1.21), indicating that NNES students are still less confident about the accuracy of their English texts than about other aspects of their EAW abilities.

Overall, the mean scores of the students confirmed that they were confident about their EAW abilities at the current stage in their PhD studies. Understandably, like their self-assessment for the beginning of the PhD program, which was shown in Table 5.11, the highest score still goes to the self-assessed item which does not need a deep level of critical thinking skill (*citing and referencing sources*), while revealing that students know how to provide proper citations in the paragraphs to support their statements with research-based evidence.

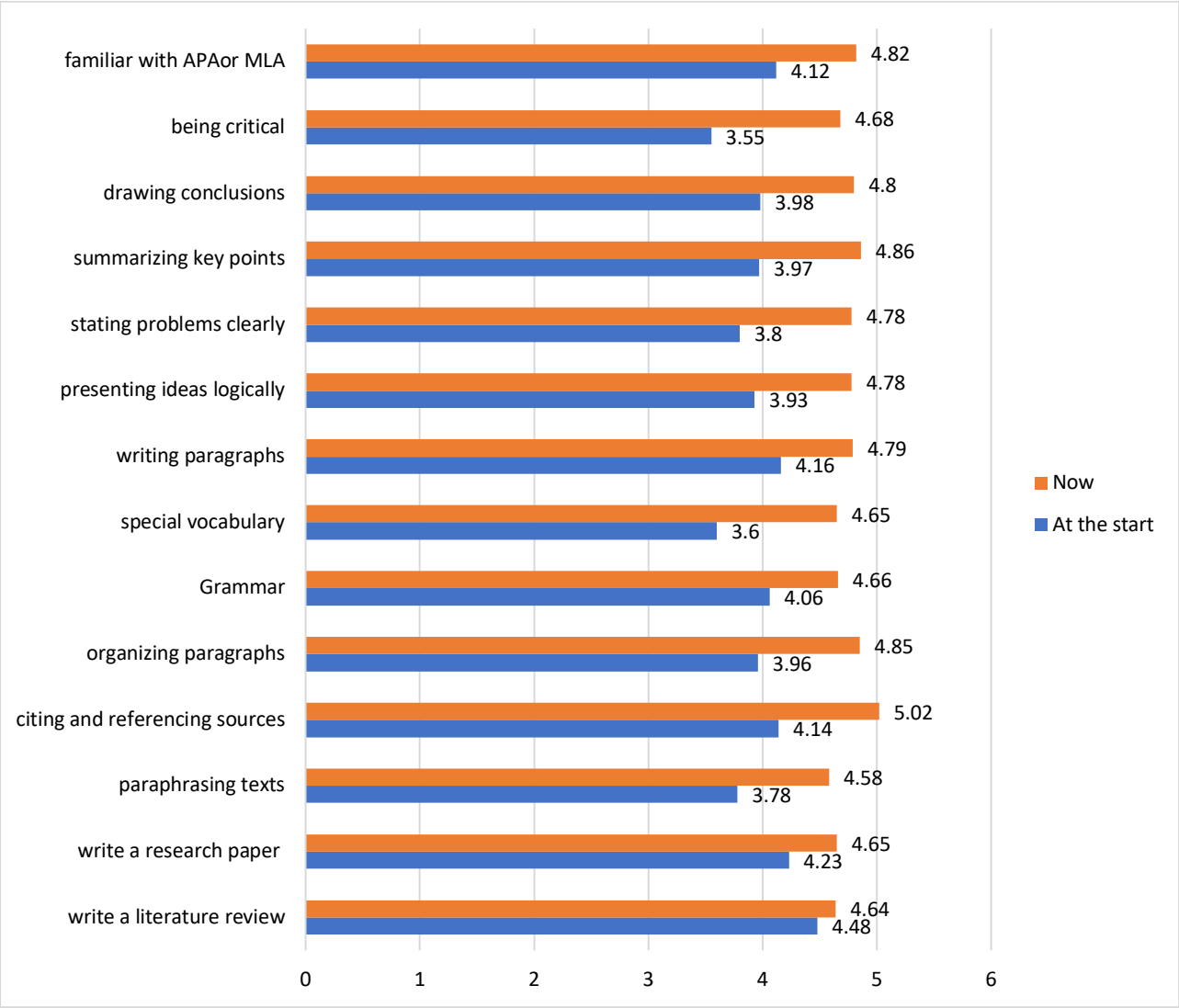
Table 5.9 Students' EAW self-assessments at the current point of their PhD studies

	English academic writing abilities at the current point of PhD studies/ now (EAWN)	M	SD
EAWN1	I can write clear, highly accurate and smoothly complex academic texts.	4.49	1.14
EAWN2	I can show flexibility in formulating ideas in differing linguistic forms to convey meaning precisely.	4.57	1.09
EAWN3	I have a good command of specific vocabulary related to my larger field of study.	4.82	0.97
EAWN4	I can create coherent and cohesive texts.	4.70	0.99
EAWN5	I can use a wide range of connectors and other cohesive devices.	4.72	1.02
EAWN6	I can demonstrate consistent and highly accurate grammatical control of complex language forms.	4.56	1.05
EAWN7	Errors are rare in my texts.	4.25	1.21
EAWN8	I can write clear, smoothly flowing, complex texts.	4.62	0.99
EAWN9	I can write a critical overview of the relevant literature.	4.64	0.99
EAWN10	I can write a publishable paper on an empirical study I designed and implemented.	4.65	1.00
	Now, when I write in English, I have no difficulties with		
EAWN11	paraphrasing texts	4.58	1.13
EAWN12	citing and referencing sources	5.02	0.96
EAWN13	organizing paragraphs	4.85	1.00
EAWN14	Grammar	4.66	1.09
EAWN15	special vocabulary	4.65	1.08
EAWN16	writing paragraphs	4.79	1.06
EAWN17	presenting ideas logically	4.78	0.96
EAWN18	stating problems clearly	4.78	0.94
EAWN19	summarizing key points	4.86	0.96
EAWN20	drawing conclusions	4.80	1.00
EAWN21	being critical	4.68	1.02
EAWN22	using guidelines like APA or MLA	4.82	1.20

5.4.2.3. Differences between EAW self-assessments at the start and at the current point of PhD studies

The survey comprised 14 identical items at the start (EAWS2, EAWS3, EAWS4, EAWS7 to EAWS17) and at the current point (EAWN9, EAWN10, EAWN11 to EAWN22) for the purpose of direct comparison. According to the results presented in sections 5.7.2.1. and 5.7.2.2, the self-assessed scores are higher at the current point (Table 5.9), compared to the scores at the start (Table 5.8). Therefore, paired samples *t*-tests for those identical self-assessments were conducted to answer research question 3. The results confirmed that the self-assessed scores at the current point were significantly higher at the level of $p < 0.001$, except the pair about *writing a literature review* which shows its statistical significance at the $p < .05$ level. Therefore, the results revealed that the 255 NNES doctoral students in this study felt a sense of progress in their EAW abilities, indicating significant improvement in the EAW abilities over their academic years of PhD studies (Figure 5.3).

Figure 5.3 Differences between EAW self-assessments at the start and at the current point in PhD studies

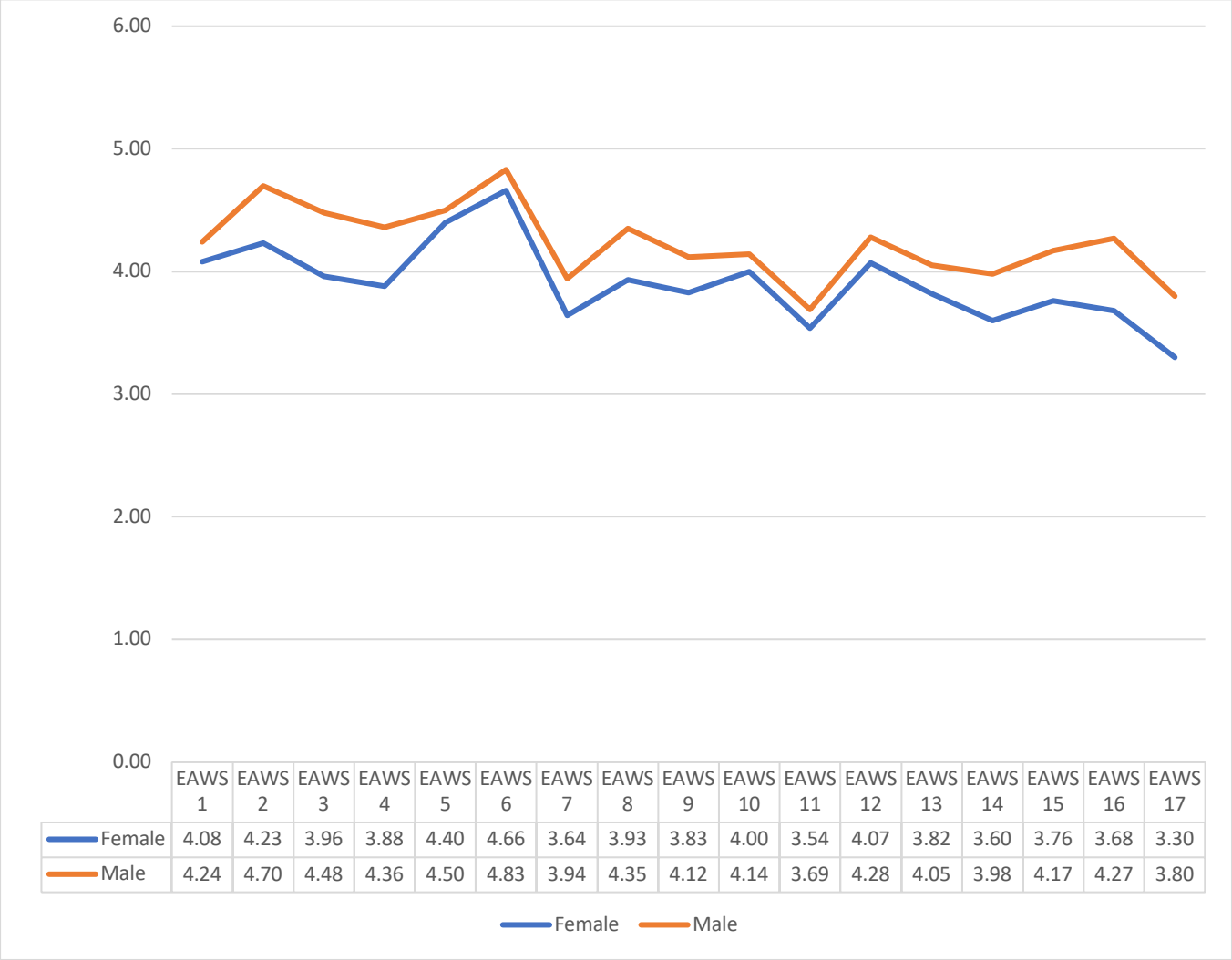


5.4.2.4. Gender differences in EAW self-assessments

As for participants' EAW abilities at the start of their PhD studies, male students gave higher scores compared to their female counterparts (Figure 5.4). Independent sample t-tests were conducted to examine the significance of these differences; they revealed statistically significant difference on the self-assessed items. In terms of knowing "how to write a literature review in English" (EAWS2), male students displayed a mean score of 4.70, which was significantly higher than the female students' mean of 4.23 ($p < 0.01$). Similarly, concerning the skill of writing "research papers in English" (EAWS3), male students achieved a mean score of 4.48 compared to the female students' mean of 3.96 ($p < 0.01$). Furthermore, in terms of familiarity with guidelines such as APA or MLA (EAWS4), male students attained a mean score of 4.36, whereas female students scored a mean of 3.88 ($p < 0.05$). The trend of male students' higher scores is also consistent in citing and referencing sources (EAWS8, male: 4.35 vs. female: 3.93, $p < 0.05$), stating problems clearly (EAWS14, male: 3.98 vs. female: 3.60, $p < 0.05$), summarizing key points (EAWS15, male: 4.17 vs.

female: 3.76, $p < 0.05$), drawing conclusions (EAWS16, male: 4.27 vs. female: 3.68, $p < 0.01$), and being critical (EAWS17, male: 3.80 vs. female: 3.30, $p < 0.01$). These outcomes underscore the initial gender differences observed in various facets of English academic writing skills among students embarking on their PhD studies.

Figure 5.4 Gender difference in the EAW self-assessments at the start of PhD studies

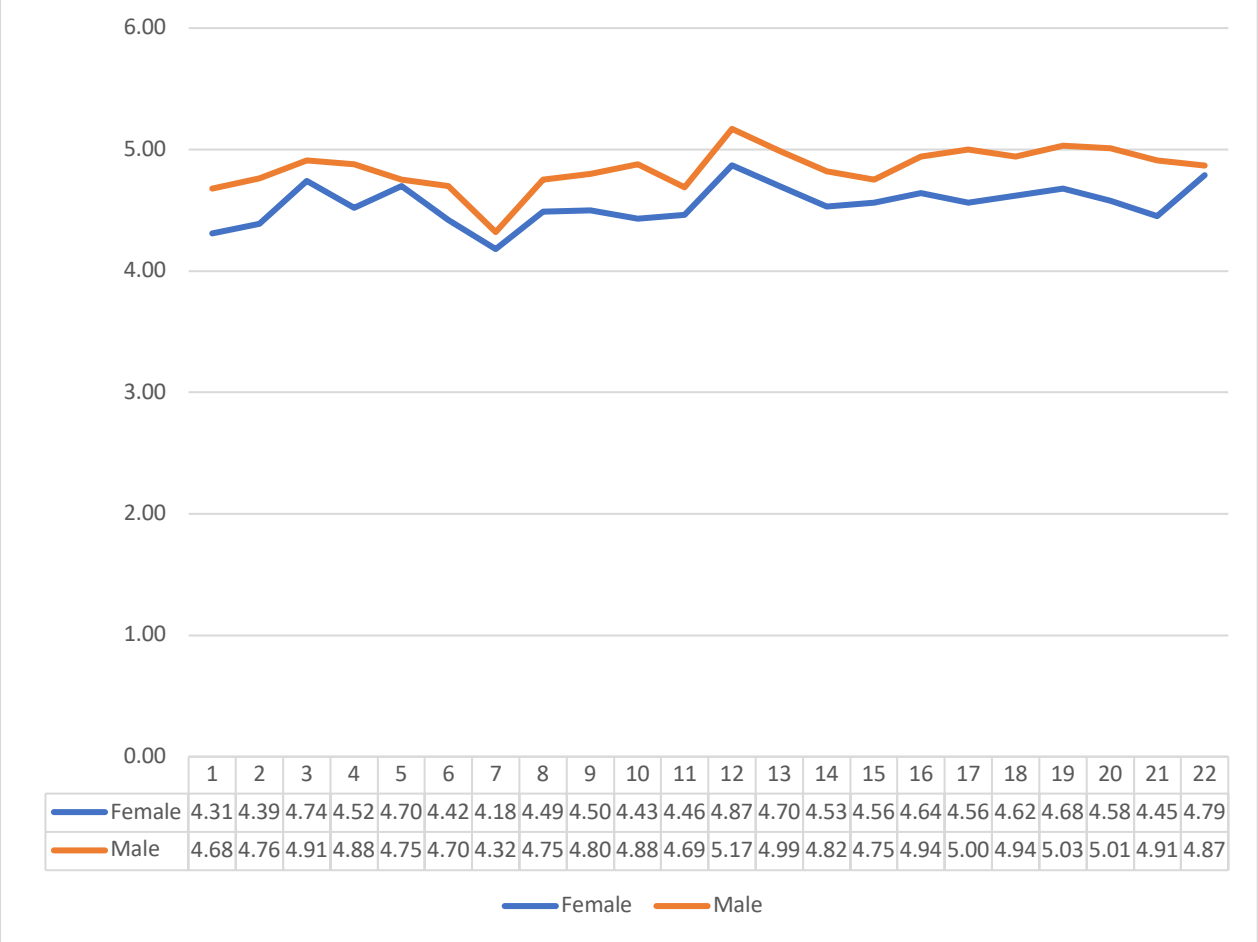


	EAWS 1	EAWS 2	EAWS 3	EAWS 4	EAWS 5	EAWS 6	EAWS 7	EAWS 8	EAWS 9	EAWS 10	EAWS 11	EAWS 12	EAWS 13	EAWS 14	EAWS 15	EAWS 16	EAWS 17
Female	4.08	4.23	3.96	3.88	4.40	4.66	3.64	3.93	3.83	4.00	3.54	4.07	3.82	3.60	3.76	3.68	3.30
Male	4.24	4.70	4.48	4.36	4.50	4.83	3.94	4.35	4.12	4.14	3.69	4.28	4.05	3.98	4.17	4.27	3.80

In the dataset on self-assessing EAW abilities at the current point of PhD studies, male students consistently obtained higher scores (Figure 5.5) and these differences proved to be statistically significant as determined through independent samples t-tests. In terms of the proficiency to compose clear, highly accurate, and smoothly flowing complex academic texts (EAWN1), male students achieved a mean score of 4.68, whereas their female peers recorded an average of 4.31 ($p < 0.05$). Similarly, in displaying the adaptability to formulate ideas using diverse linguistic forms for precise communication (EAWN2), male students attained an mean score of 4.76 compared to the mean of 4.39 for female students ($p <0.01$). This pattern of male students outscoring their female peers is typical across various dimensions, such as creating coherent and cohesive texts (EAWN4, male: 4.88 vs. female: 4.52, $p < 0.01$), demonstrating consistent grammatical control (EAWN6, male: 4.70 vs. female: 4.42, $p < 0.05$), and crafting smoothly flowing, complex texts (EAWN8, male: 4.75 vs. female: 4.49, $p < 0.05$). Additionally, male students claimed to excel more in producing critical overviews of

the relevant literature (EAWN9, male: 4.80 vs. female: 4.50, $p < 0.05$), generating publishable papers on empirical studies (EAWN10, male: 4.88 vs. female: 4.43, $p < 0.01$), and adeptly citing and referencing sources (EAWN12, male: 5.17 vs. female: 4.87, $p < 0.05$). Furthermore, male students obtained higher mean scores on organizing paragraphs (EAWN13, male: 4.99 vs. female: 4.70, $p < 0.05$), showcasing their grammar skills (EAWN14, male: 4.82 vs. female: 4.53, $p = 0.030$), crafting paragraphs (EAWN16, male: 4.94 vs. female: 4.64, $p < 0.05$), presenting ideas logically (EAWN17, male: 5.00 vs. female: 4.56, $p < 0.001$), articulating problems clearly (EAWN18, male: 4.94 vs. female: 4.62, $p < 0.01$), summarizing key points (EAWN19, male: 5.03 vs. female: 4.68, $p < 0.01$), drawing conclusions (EAWN20, male: 5.01 vs. female: 4.58, $p = 0.001$), and exhibiting critical thinking (EAWN21, male: 4.91 vs. female: 4.45, $p < 0.001$). These findings consistently underscore the higher self-perceived English academic writing proficiency of male students across diverse dimensions compared to their female colleagues, and this pattern did not change over time.

Figure 5.5 Gender difference in the EAW self-assessments at the current point of PhD studies



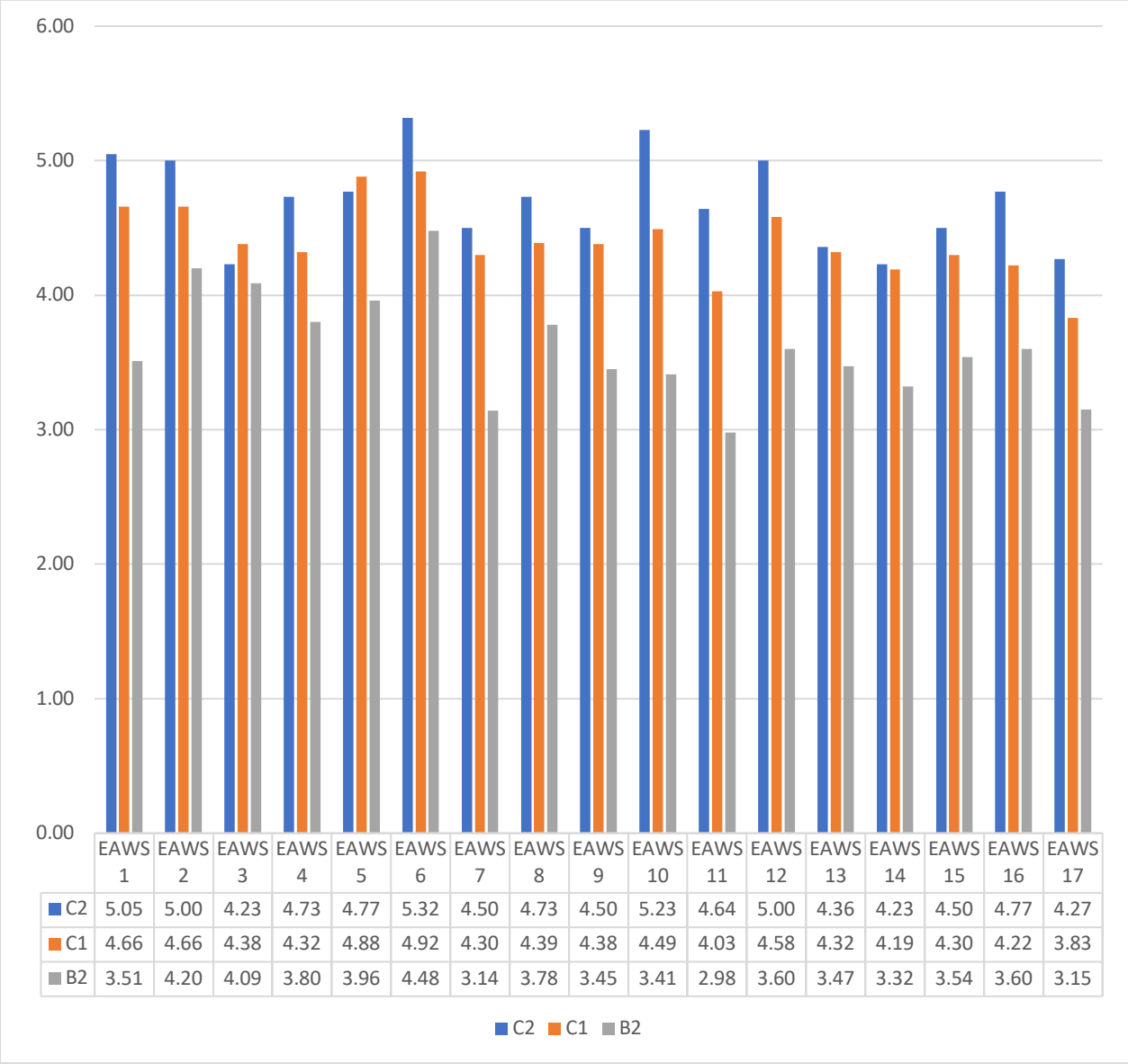
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Female	4.31	4.39	4.74	4.52	4.70	4.42	4.18	4.49	4.50	4.43	4.46	4.87	4.70	4.53	4.56	4.64	4.56	4.62	4.68	4.58	4.45	4.79
Male	4.68	4.76	4.91	4.88	4.75	4.70	4.32	4.75	4.80	4.88	4.69	5.17	4.99	4.82	4.75	4.94	5.00	4.94	5.03	5.01	4.91	4.87

5.4.2.5. EAW self-assessments of C2, C1 and B2 English proficiency groups

The descriptive analysis results showed that the lowest scores on all self-assessed statements characterized respondents in the B2 group, whereas the C2 level group received the highest self-assessed scores, and the C1 group, the second highest. To investigate if the differences are statistically significant among the three groups (C2, C1, B2), one-way ANOVA tests were

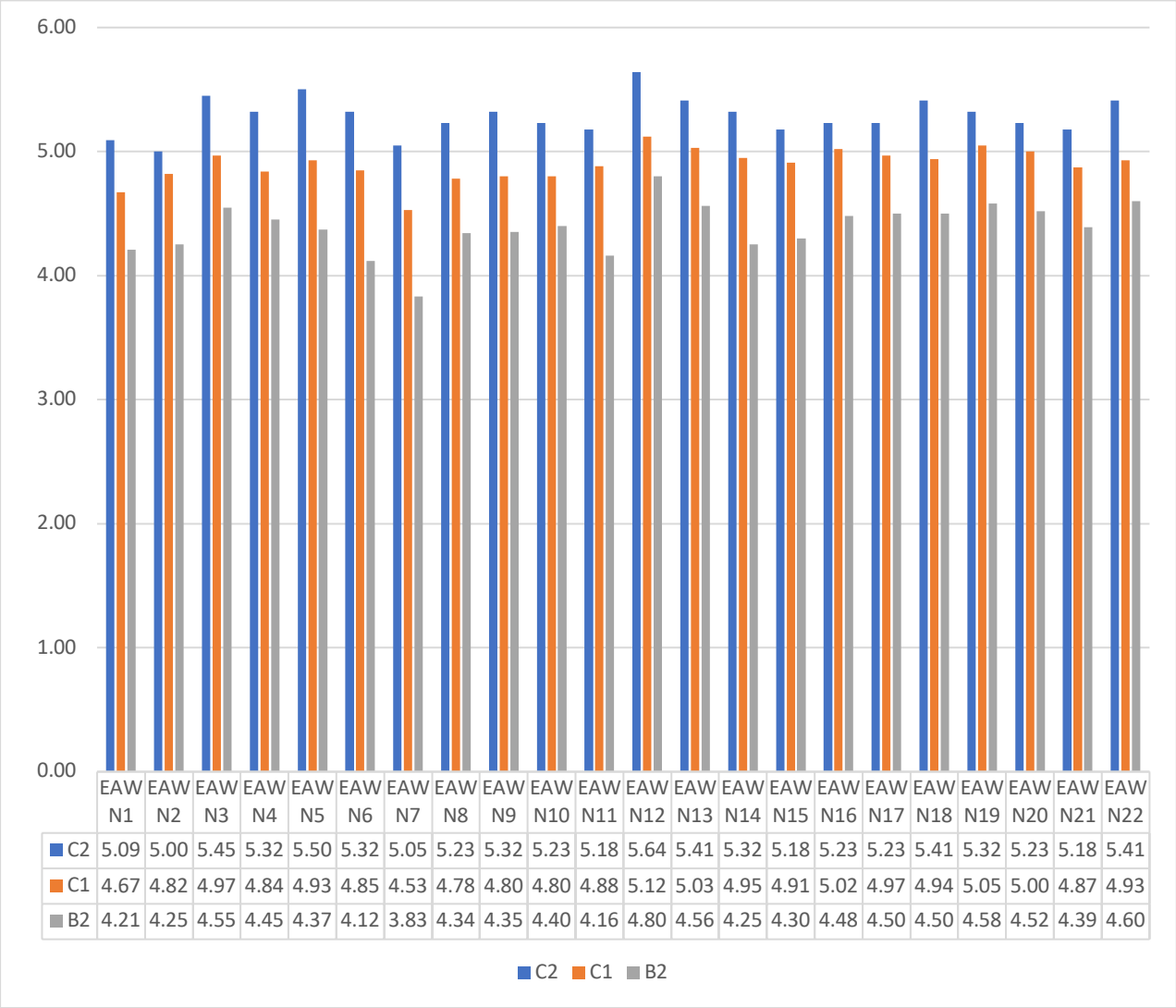
performed. The results at the start of PhD studies are shown in Figure 5.6 and at the current point of PhD studies, in Figure 5.7. The test revealed that differences were significant both at the start and at the current moment, except for one statement: *I did not know how to write a research paper in English* at the start (EAWS3). For this statement, the difference is not significant at the $p<.05$ level for any of the three proficiency levels [$F(2, 252) = 1.038$, $p>.05$]. According to Post Hoc Tukey HSD tests, the scores of C2 and C1 groups were statistically higher than those for respondents at B2 level ($p<.05$) both at the start and at the current point of PhD studies (see the detailed results of statistical analysis in Appendix C). Therefore, the results reveal that the higher the students' objectively measured level of English proficiency, the more confident they are about their ability to write academic texts in English.

Figure 5.6 Self-assessments of C2, C1 and B2 students for EAW at the start of PhD studies



	EAWS 1	EAWS 2	EAWS 3	EAWS 4	EAWS 5	EAWS 6	EAWS 7	EAWS 8	EAWS 9	EAWS 10	EAWS 11	EAWS 12	EAWS 13	EAWS 14	EAWS 15	EAWS 16	EAWS 17
C2	5.05	5.00	4.23	4.73	4.77	5.32	4.50	4.73	4.50	5.23	4.64	5.00	4.36	4.23	4.50	4.77	4.27
C1	4.66	4.66	4.38	4.32	4.88	4.92	4.30	4.39	4.38	4.49	4.03	4.58	4.32	4.19	4.30	4.22	3.83
B2	3.51	4.20	4.09	3.80	3.96	4.48	3.14	3.78	3.45	3.41	2.98	3.60	3.47	3.32	3.54	3.60	3.15

Figure 5.7 Self-assessments of C2, C1 and B2 students for EAW at the current point of PhD studies



	EAW N1	EAW N2	EAW N3	EAW N4	EAW N5	EAW N6	EAW N7	EAW N8	EAW N9	EAW N10	EAW N11	EAW N12	EAW N13	EAW N14	EAW N15	EAW N16	EAW N17	EAW N18	EAW N19	EAW N20	EAW N21	EAW N22
C2	5.09	5.00	5.45	5.32	5.50	5.32	5.05	5.23	5.32	5.23	5.18	5.64	5.41	5.32	5.18	5.23	5.23	5.41	5.32	5.23	5.18	5.41
C1	4.67	4.82	4.97	4.84	4.93	4.85	4.53	4.78	4.80	4.80	4.88	5.12	5.03	4.95	4.91	5.02	4.97	4.94	5.05	5.00	4.87	4.93
B2	4.21	4.25	4.55	4.45	4.37	4.12	3.83	4.34	4.35	4.40	4.16	4.80	4.56	4.25	4.30	4.48	4.50	4.50	4.58	4.52	4.39	4.60

5.4.2.6. Differences among EAW self-assessments across the academic years

To investigate whether there are significant differences across five years (1st, 2nd, 3rd, 4th, 4+ year of PhD studies), we performed one-way ANOVA tests for all the self-assessed items in the English academic writing abilities at the current point of PhD studies. The analysis showed a significant difference for only one item: *I have a good command of specific vocabulary related to my larger field of study* at the $p<0.05$ level among the different groups of PhD studies [$F(5, 249) = 2.495$, $p<0.05$]. Therefore, we conducted a Post Hoc comparison using a Dunnett T3 test; however, the test did not show any specific difference among the groups.

5.4.3. Students' self-assessments of their research knowledge and abilities

This section presents the analysis results of students' self-assessments regarding their research knowledge and abilities for conducting doctoral research, both at the beginning of their PhD journey and at the current stage of their studies. The differences between the self-assessments

during the initial stage and the present time are also included. Furthermore, the analysis examines the differences between genders and three proficiency groups (C2, C1, and B2). It is worth noting that no statistical differences were found among the academic years and age groups.

5.4.3.1. Students' self-assessed research knowledge and abilities at the start of PhD studies

Table 5.10 shows the students' self-assessments of their knowledge about their fields of research and methods, and their abilities to conduct research. The results show that mean scores for research area knowledge, research design and research methodology, and finding and analyzing the special literature were quite high, as they range from 4.04 to 4.08. These results indicated that students thought they were competent in these areas; it is logical to infer that respondents must have gained knowledge about their field of research while pursuing their previous degree or preparing for their doctoral studies. This must be the reason why students agreed that they had *a good knowledge of finding and analyzing the special literature*, and *research design and methodology* at the start.

Their mean scores on designing research instruments, formulating research questions, analyzing data, and their ability to write a publishable paper in English were lower, as they ranged between 3.67 and 3.95, indicating that they agreed with those statements to a lesser degree. Their answers indicate that they were more self-confident about how much they knew about their field and research methods than designing and implementing their studies and sharing their findings in English. In other words, they tended to be more certain about what they needed to do than about how they were to put their knowledge into practice.

Table 5.10 Students' self-assessed research knowledge and abilities at the start of PhD studies

	Research knowledge at the start of PhD studies (RS)	M	SD
	When I started the doctoral program, I had a good knowledge of		
RS1	my research area	4.08	1.36
RS2	research design and research methodology	4.04	1.40
RS3	finding and analyzing the special literature	4.04	1.36
RS4	designing research instruments	3.69	1.42
RS5	formulating research questions	3.95	1.32
RS6	analyzing data	3.84	1.47
RS7	how to write a publishable paper in English	3.67	1.50

5.4.3.2. Students' self-assessed research knowledge and abilities at the current point of PhD studies

The students' self-assessments of their abilities at the current stage of their studies in their doctoral journey are shown in Table 5.11. Mean scores were higher, indicating that students agreed with all the statements to a larger degree (means between 4.65 and 4.89 and SD between 0.93 and 1.12). Like in their self-assessments for the starting point shown in Table 5.11, the highest means were found on the items on knowledge of research area and finding

and analysing the literature. Therefore, putting what they knew into practice resulted in lower self-assessed means. These results indicate that designing research instruments, analyzing datasets, and writing a dissertation in English were still most challenging, but less so than at the start (Table 5.11).

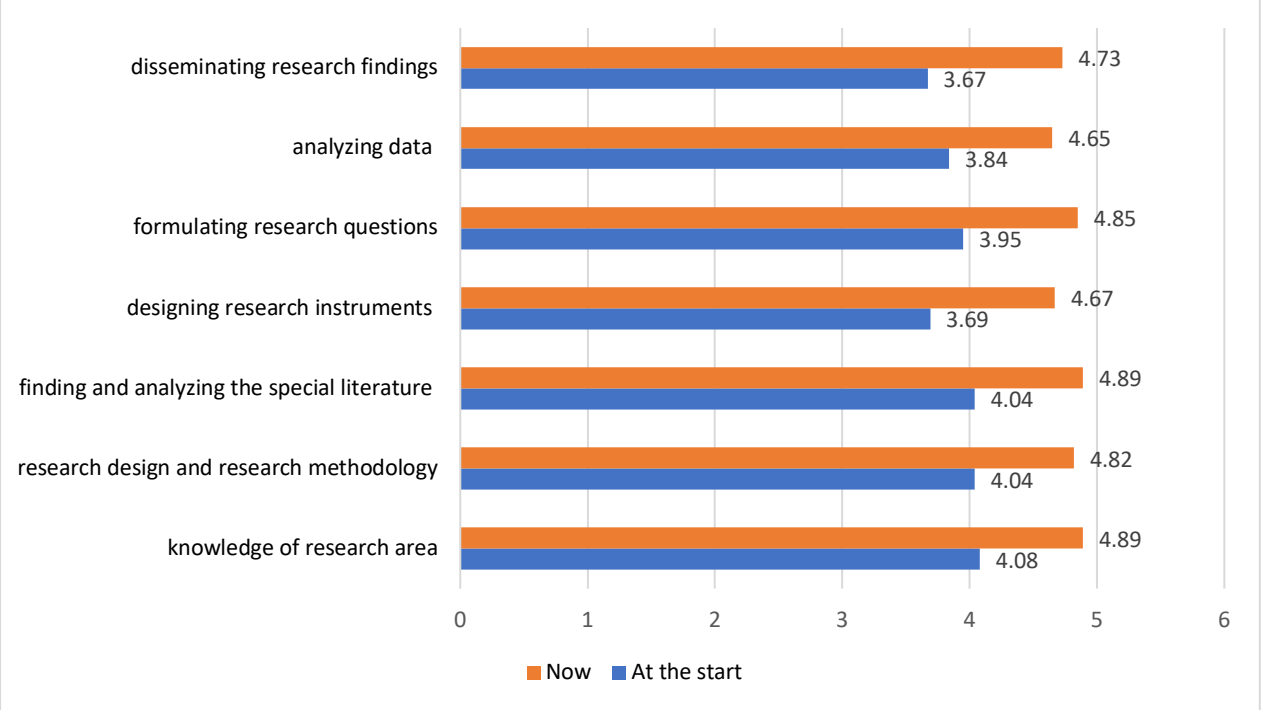
Table 5.11 Students' self-assessed research knowledge and abilities at the current point of PhD studies

	Research knowledge at the current stage of PhD studies/now (RN)	M	SD
	Now I feel confident that I have a good knowledge of		
RN1	research area	4.89	0.98
RN2	research design and research methodology	4.82	1.00
RN3	finding and analyzing the special literature	4.89	0.93
RN4	designing research instruments	4.67	1.05
RN5	formulating research questions	4.85	0.95
RN6	analyzing data	4.65	1.12
RN7	how to write my dissertation in English	4.73	1.12

5.4.3.3. Differences between self-assessed research knowledge at the start and at current point in doctoral studies

The results presented in Table 5.10 and Table 5.11 show that students' self-assessed mean scores for every item at the current point are higher than those of at the start. Therefore, paired samples t tests were conducted to see if the differences are statistically significant. The results confirmed significant differences at the $p<.01$ level. These findings indicate that students believed that they were making progress in their knowledge and abilities in conducting research (Figure 5.8).

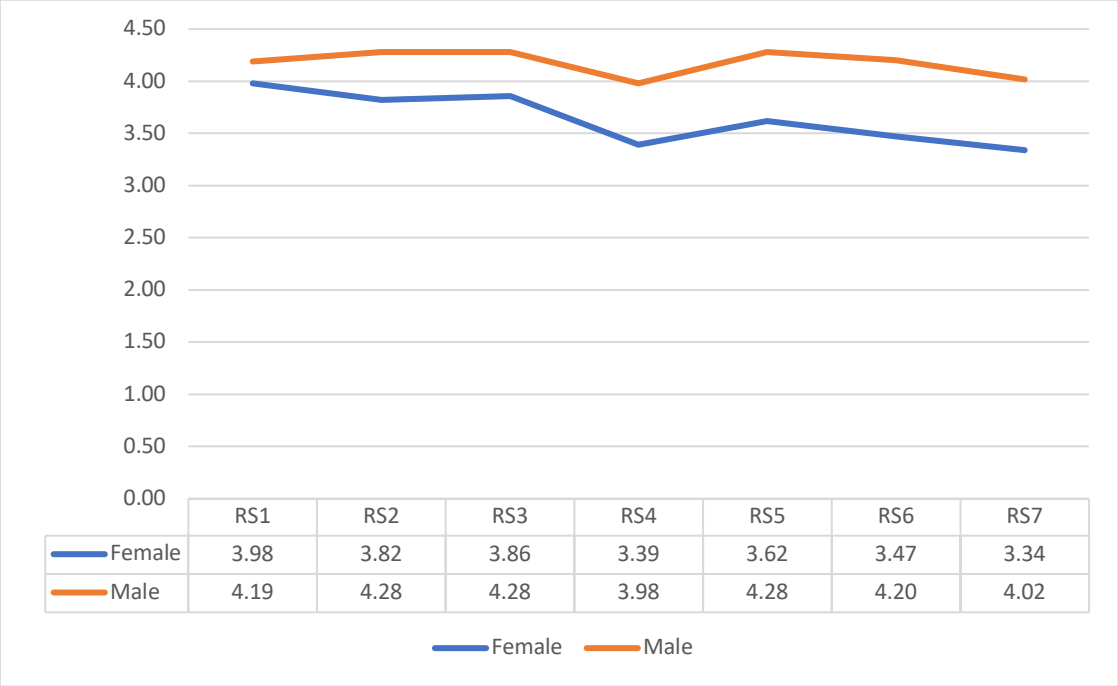
Figure 5.8 Differences between self-assessed research knowledge at the start and now



5.4.3.4. Gender differences in self-assessed knowledge about research

Differences between respondents' gender in self-assessed research knowledge observed at the start of PhD studies are evident in the dataset (Figure 5.9). The disparity prompted a thorough examination through independent samples t-tests to ascertain the statistical significance of these divergences. The analyses unveiled statistically significant differences across all assessed domains. In terms of comprehension of one's research area (RS1), male students exhibited a higher mean score of 4.19 compared to female students' mean of 3.98 ($p < 0.01$). This trend persisted in finding and analyzing special literature (RS3, male: 4.23 vs. female: 3.86, $p < 0.01$), designing research instruments (RS4, male: 3.98 vs. female: 3.39, $p < 0.01$), formulating research questions (RS5, male: 4.28 vs. female: 3.62, $p < 0.01$), analyzing data (RS6, male: 4.20 vs. female: 3.47, $p < 0.01$), and understanding how to write a publishable paper in English (RS7, male: 4.02 vs. female: 3.34, $p < 0.01$). These findings indicate a consistently more favorable pattern for male students' self-assessed competencies on diverse aspects of conducting doctoral research at the outset of their PhD studies.

Figure 5.9 Gender difference in research knowledge self-assessments at the start of PhD studies

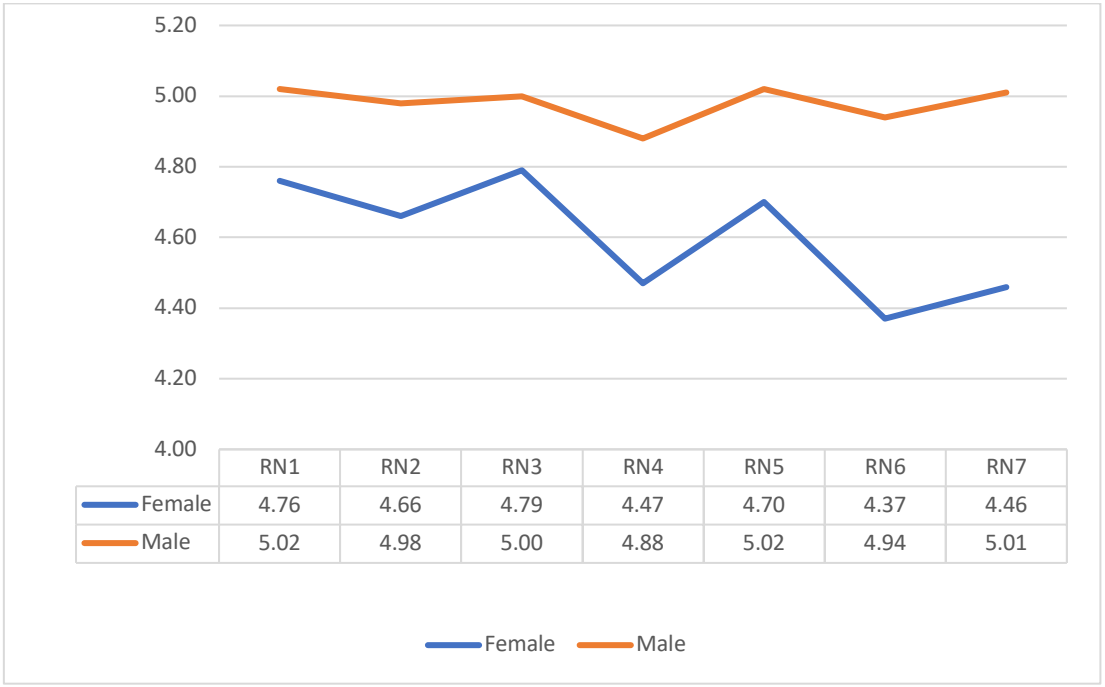


	RS1	RS2	RS3	RS4	RS5	RS6	RS7
Female	3.98	3.82	3.86	3.39	3.62	3.47	3.34
Male	4.19	4.28	4.28	3.98	4.28	4.20	4.02

A similar outcome characterized gender differences in the area of research knowledge at the current point in PhD studies as well (Figure 5.10). The independent samples t-tests unveiled statistically significant differences across the self-assessed items. In terms of understanding one's research area (RN1), male students showcased a higher mean score of 5.02, whereas female students attained a mean of 4.76 ($p < 0.01$). This trend is consistent in research design and methodology (RN2, male: 4.98 vs. female: 4.66, $p < 0.01$), finding and analyzing special literature (RN3, male: 5.00 vs. female: 4.79, $p < 0.01$), designing research instruments (RN4, male: 4.88 vs. female: 4.47, $p < 0.01$), formulating research questions (RN5, male: 5.02 vs. female: 4.70, $p < 0.01$), analyzing data (RN6, male: 4.94 vs. female: 4.37, $p < 0.01$), and

knowing how to write a dissertation in English (RN7, male: 5.01 vs. female: 4.46, $p < 0.01$). These results underscore a persistent male advantage in the dataset: men tend to self-assess their knowledge and competence on all studied aspects of conducting doctoral research more positively than their female peers.

Figure 5.10 Gender difference in research knowledge self-assessments at the current point of PhD studies

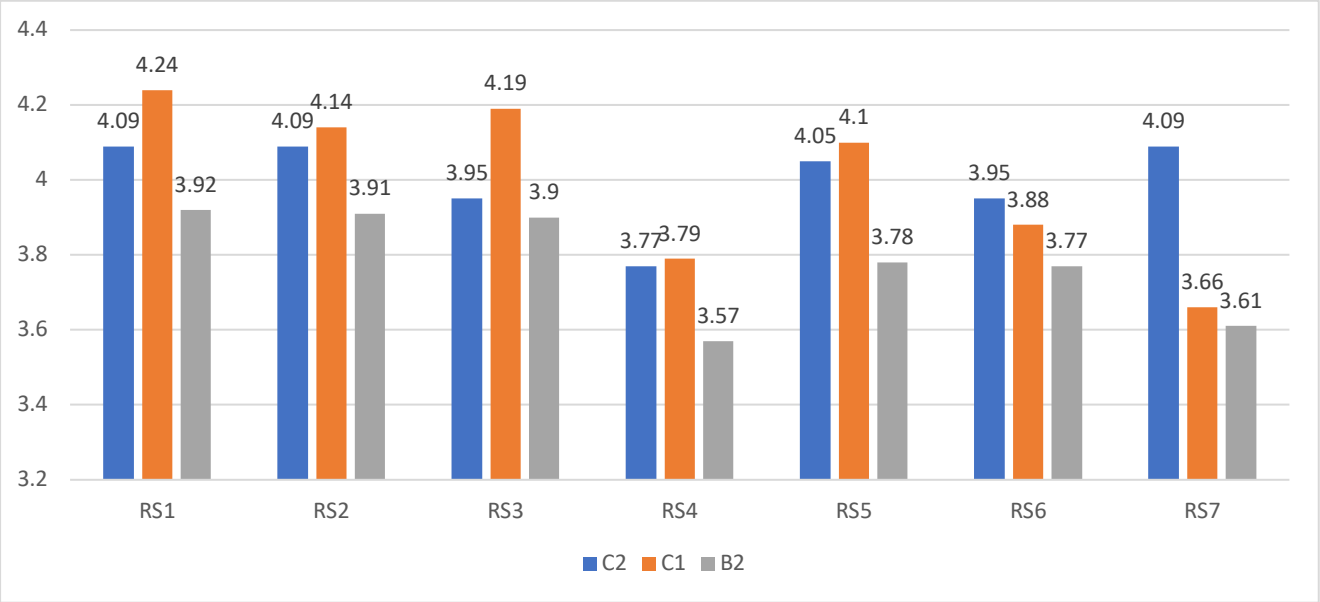


	RN1	RN2	RN3	RN4	RN5	RN6	RN7
Female	4.76	4.66	4.79	4.47	4.70	4.37	4.46
Male	5.02	4.98	5.00	4.88	5.02	4.94	5.01

5.4.3.5. Differences in self-assessed research knowledge in three groups of English proficiency

The results of the one-way ANOVA indicate that there were no significant differences among participants in the three proficiency groups in their self-assessment of research knowledge and abilities at the outset of their PhD studies. However, it is noteworthy that the lowest self-assessment mean scores were recorded by the B2 group. This finding indicates that respondents whose certified English proficiency level was at the intermediate level (B2), estimated their research-related knowledge and skills the lowest. Interestingly, C1 students' self-assessed mean scores surpassed those of C2 students in several domains such as research area expertise, research design and methodology, specialized literature exploration and analysis, research instrument design, and research question formulation. These findings suggest that starting a PhD program with the highest level of English proficiency does not necessarily correspond with a higher level of knowledge about research practices. On the item evaluating English academic writing proficiency (RS7), the significance of proficiency in the target language becomes evident, as C2 students outperformed C1 students, who, in turn, outperformed B2 students (see Figure 5.11).

Figure 5.11 Self-assessed research knowledge of C2, C1, and B2 students at the start of PhD studies



However, when assessing research knowledge at the current stage of their PhD studies, the results of the one-way ANOVA indicate significant differences among the three groups, except for the research knowledge area item; these findings clearly suggest that students in English-medium PhD programs demonstrate noteworthy progress in developing research knowledge when possessing an advanced level of English proficiency certificate (see Figure 5.12). Subsequently, post hoc tests utilizing Tukey HSD tests were conducted, revealing that the B2 group received lower self-assessed scores from among the three groups (refer to Table 5.12).

Figure 5.12 Self-assessed research knowledge of C2, C1, and B2 students at the current point of PhD studies

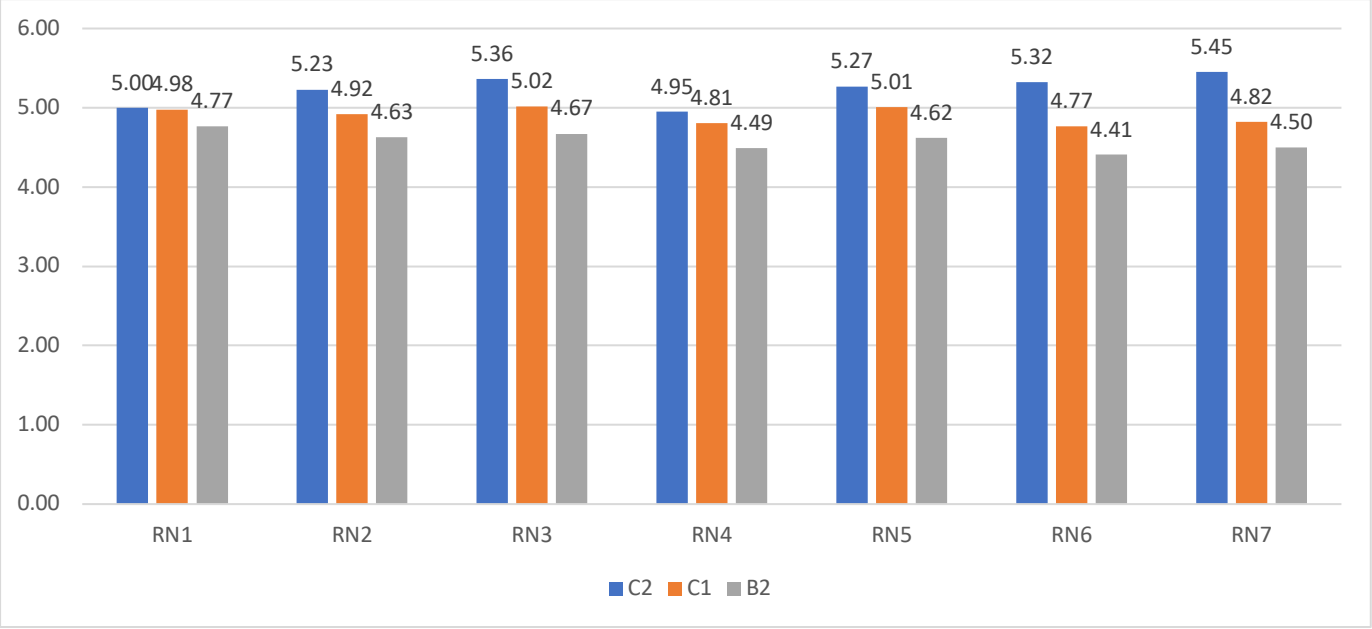


Table 5.12 Significant differences among self-assessed research knowledge in three groups of English proficiency

		Mean Difference(I-J)	S. E	p	95% CI Lower	95% CI Upper
1	research design and research methodology (now)					
	I (B2) vs. J (C2)	-.60119*	0.230	0.024	-1.140	-0.060
2	finding and analyzing the special literature (now)					
	I (B2) vs. J (C2)	-.69407*	0.210	0.003	-1.190	-0.200
	I (B2) vs. J (C1)	-.34738*	0.120	0.010	-0.630	-0.070
3	formulating research questions (now)					
	I (B2) vs. J (C2)	-.65534*	0.220	0.008	-1.170	-0.140
	I (B2) vs. J (C1)	-.39108*	0.120	0.004	-0.680	-0.100
4	analyzing data (now)					
	I (B2) vs. J (C1)	-.90949*	0.250	0.001	-1.510	-0.310
	I (B2) vs. J (C2)	-.36249*	0.140	0.032	-0.700	-0.020
5	how to write my dissertation in English (now)					
	I (C1) vs. J (C2)	-.63251*	0.250	0.035	-1.230	-0.040
	I (B2) vs. J (C2)	-.95020*	0.250	0.001	-1.550	-0.350

Note. * $p < 0.05$. CI = Confidence Interval.

5.4.4. Students' self-assessments of their English academic reading (EAR) comprehension

This section presents the results of students' self-assessments regarding their English academic reading (EAR) abilities. Additionally, it includes the analysis results regarding the differences according to gender, three English proficiency groups (C2, C1, and B2), and academic years.

5.4.4.1. Students' self-assessment of their EAR abilities

As the means of doctoral students' self-assessed scores ranged between 4.38 and 4.84 (SD between .96 and 1.32), they were overwhelmingly confident about their EAR abilities (see Table 5.13). The lowest self-assessed mean score is found on *comprehending technical words or phrases* (EAR1) and the highest on *understanding the details in long complex texts without using a dictionary* (EAR2). Therefore, the findings shown in Table 5.13 revealed that the students were quite certain that they could grasp the meaning of the academic texts without looking up words even if they might not understand all technical terms in the text.

Based on their self-assessed scores, it is also noticeable that both the lowest and highest self-assessed mean scores were found on the items tapping into students' lexical knowledge: it was the lowest on EAR1, comprehension of *technical words or phrases*, whereas the highest on EAR2 understanding *the details in long complex texts without using a dictionary*. Item EAR3 (*I can understand journal articles without rereading difficult sections*.) inquired

directly into the ability to comprehend academic materials in English in a straightforward manner; the mean score on EAR3 is a bit lower than that of the two items assessing students' critical thinking skill**.** As all the 255 participants came from NNES backgrounds and only the minority of them had documented very advanced level (C2) proficiency, it is logical to assume that this might be the reason why the mean score on item EAR3 (tapping into the ability required to understand difficult texts) is lower than that of critical thinking self-assessments. And, as for their ability to critically analyze the texts they read (EAR4 and EAR5), the students' assessments were consistent; besides (M=4.80 and M=4.70 respectively); besides, SD data were lower than on the other three items (SD=.96 and SD=.98 respectively), indicating less variation in the sample.

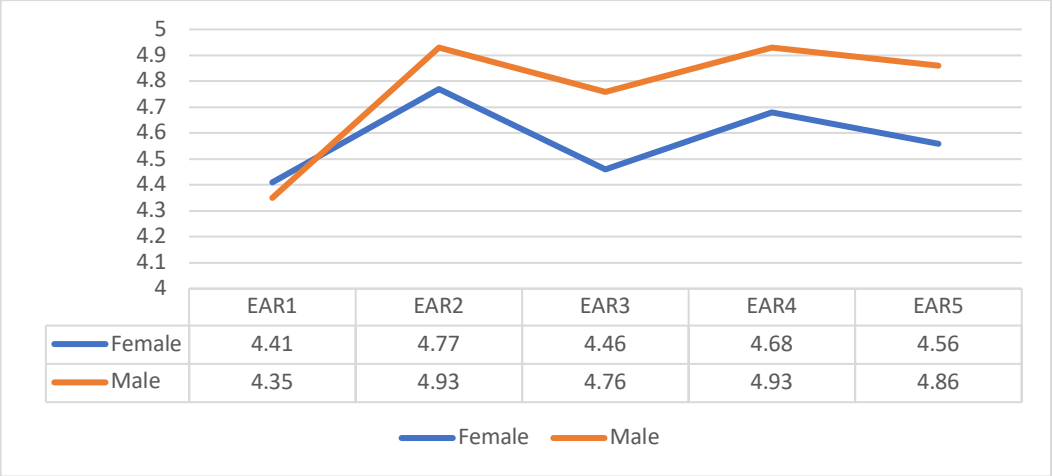
Table 5.13 Students' EAR self-assessments

	English academic reading (EAR)	M	SD
EAR1	I rarely have difficulty with comprehending technical words or phrases.	4.38	1.32
EAR2	I can understand the details in long complex texts without using a dictionary.	4.84	1.07
EAR3	I can understand journal articles without rereading difficult sections.	4.60	1.12
EAR4	I can use my critical thinking to determine how well a publication is researched.	4.80	0.96
EAR5	I can use my critical thinking to decide the validity of arguments in a text.	4.70	0.98

5.4.4.2. Gender differences in the students' EAR self-assessments

Respondents' self-assessed EAR abilities reflect gender-related differences (Figure 5.13). These disparities prompted an analysis employing independent samples t-tests to assess their statistical significance. Even though female students scored slightly higher in EAR1, indicating that they rarely have difficulty comprehending technical words or phrases (female: 4.41 vs. male: 4.35), the difference was not significant. Similarly, in EAR2, both genders demonstrated high competence in comprehending complex texts without having to consult a dictionary (male: 4.93 vs. female: 4.77), even though male students' mean score slightly surpassed that of female students, the difference was not significant**.** A significant difference emerged on item EAR3, where female students exhibited a mean score of 4.46 compared to male students' mean of 4.76. Thus, men were significantly more certain they can understand journal articles without rereading difficult sections ($p = 0.028$). Likewise, in response to item EAR4, women got a mean score of 4.68, whereas men had a mean score of 4.93, indicating that males were significantly more confident about critically evaluating the research quality of publications ($p = 0.040$). The gender disparity persisted on item EAR5, with female students scoring 4.56 and male students scoring 4.86, highlighting the use of critical thinking to assess argument validity in texts ($p = 0.016$). These findings underscore subtle yet significant gender-related differences in self-assessed EAR abilities, suggesting potential variations in how men and women approach and comprehend various aspects of complex academic texts.

Figure 5.13 Gender difference in EAR self-assessments



	EAR1	EAR2	EAR3	EAR4	EAR5
Female	4.41	4.77	4.46	4.68	4.56
Male	4.35	4.93	4.76	4.93	4.86

5.4.4.3. Differences in self-perceived EAR of respondents at C2, C1 and B2 level of English proficiency

The students' self-assessments revealed that the higher their English proficiency, the more confident they were about their own abilities for academic reading. One-way ANOVA results showed that the differences were significant (see Figure 5.14). Therefore, Post Hoc tests using Tukey HSD were performed and the results showed that the mean scores of the C2 group were significantly higher than those of students at B2 level on every EAR self-assessment, and the C1 group's mean scores were significantly higher than those for the B2-level group for three (EAR3-5) out of five EAR items. For EAR4, the C2-level group's mean score was significantly higher than that of students at the C1 level (see Table 5.14).

Figure 5.14 EAR self-assessments of C2, C1 and B2 groups

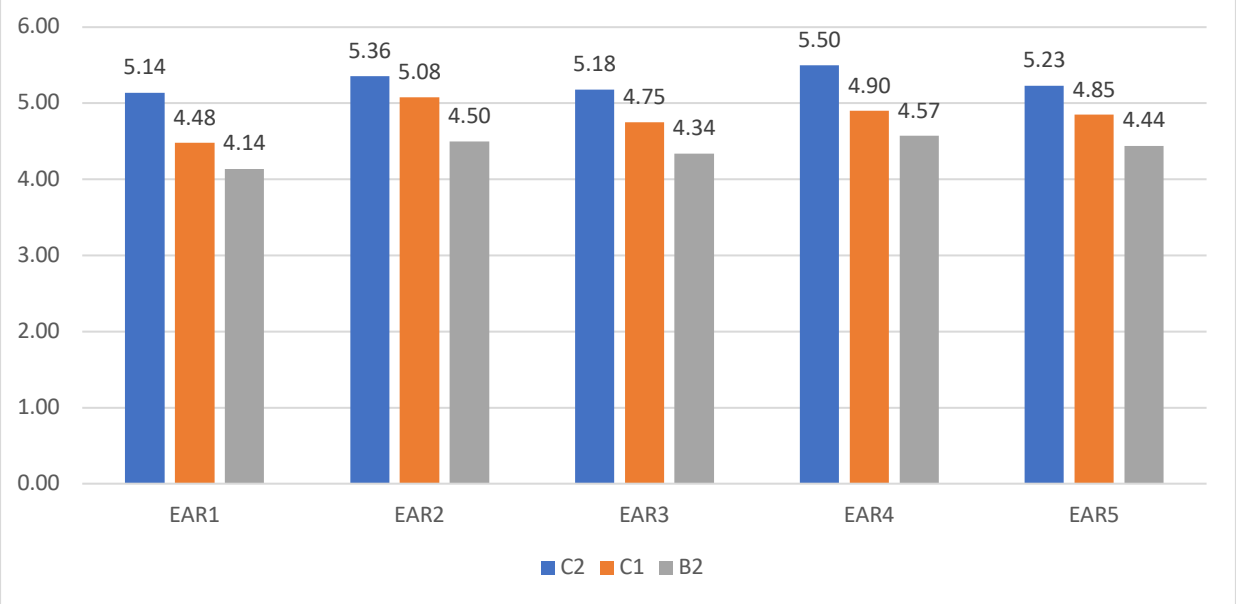


Table 5.14 Significant difference in EAR self-assessments of C2, C1 and B2 groups

		Mean Difference (I-J)	p	95% CI Lower	95% CI Upper
EAR1	comprehend technical words or phrases.				
	I (C2) vs. J (B2)	.99961*	0.003	0.2912	1.7081
EAR2	understand the details in long complex texts without using a dictionary				
	I (C2) vs. J (B2)	.86791*	0.001	0.3086	1.4272
EAR3	understand journal articles without rereading difficult sections				
EAR3	I (C2) vs. J (B2)	.83994*	0.003	0.2428	1.4371
EAR4	critically determine how well a publication is researched	.40812*	0.013	0.0714	0.7448
	I (C2) vs. J (C1)	.60345*	0.015	0.0948	1.1121
	I (C2) vs. J (B2)	.92735*	0.000	0.4191	1.4356
	I (C1) vs. J (B2)	.32390*	0.022	0.0373	0.6105
EAR5	critically decide the validity of arguments in a text				
	I (C1) vs. J (B2)	.78283*	0.001	0.2603	1.3054
	I (C1) vs. J (B2)	.40900*	0.003	0.1144	0.7036

Note. * $p < 0.05$. CI = Confidence Interval.

5.4.4.4. Differences across academic years of PhD studies

Table 5.15 shows the mean scores and standard deviations across the years. They indicate that the lowest self-assessed mean scores characterize the most junior students (1st-year PhD students) on all EAR items. According to the result of one-way ANOVA tests, differences for EAR3 and EAR4 were significant at the $p<.05$ level. Therefore, to identify the groups with significant differences, Post Hoc tests using Tukey HSD were performed. The analysis revealed that the mean scores of 4th-year PhD students were significantly higher than those of 1st-year doctoral students on item EAR3. On item EAR4, 3rd-year PhD students' mean scores were significantly higher than those of 1st-year PhD students (see Table 5.16).

Table 5.15 Self-assessments of 1st-, 2nd-, 3rd-, 4th-year and 4+ years PhD students

	English academic reading (EAR)		M	SD
EAR1	I rarely have difficulty with comprehending technical words or phrases.	First-year PhD	4.09	1.36
		Second-year PhD	4.50	1.13
		Third-year PhD	4.72	1.28
		Fourth-year PhD	4.40	1.53
		8+ semester	5.00	0.71
EAR2	I can understand the details in long complex texts without using a dictionary.	First-year PhD	4.65	1.19
		Second-year PhD	4.80	1.10
		Third-year PhD	5.11	0.80

		Fourth-year PhD	5.00	0.95
		8+ semester	5.20	0.84
EAR3	I can understand journal articles without rereading difficult sections.	First-year PhD	4.34	1.15
		Second-year PhD	4.52	1.15
		Third-year PhD	4.87	1.02
		Fourth-year PhD	4.93	1.06
		8+ semester	5.00	0.71
EAR4	I can use my critical thinking to determine how well a publication is researched.	First-year PhD	4.52	1.07
		Second-year PhD	4.89	0.78
		Third-year PhD	5.09	0.84
		Fourth-year PhD	4.95	1.02
		8+ semester	4.80	0.84
EAR5	I can use my critical thinking to decide the validity of arguments in a text.	First-year PhD	4.44	1.03
		Second-year PhD	4.80	0.84
		Third-year PhD	4.89	1.06
		Fourth-year PhD	4.88	0.98
		8+ semester	4.80	0.84

Table 5.16 Self-assessments of 1st-, 2nd-, 3rd-, 4th-year and 4+ years PhD students

		Mean Difference (I-J)	P	95% CI Lower	95% CI Upper
EAR3	understand journal articles without rereading difficult sections I (1st -year) vs. J (4th -year)	-.58615*	0.048	-1.1692	-0.0031
EAR4	critically determine how well a publication is researched I (1st -year) vs. J (3rd-year)	-.57083*	0.012	-1.0595	-0.0822

Note. * $p < 0.05$. CI = Confidence Interval.

5.4.5. Students' perceptions of the quality of feedback they received

This section focuses on how participants felt about the quality of feedback they got and gender differences in their views. No significant differences were found among students in the three groups of general proficiency, the five categories in academic years, and the age groups.

5.4.5.1. Students' views on feedback quality

According to the analysis results, the students' responses expressed an overall positive perception of the quality of feedback they received from tutors, thesis advisors, and peers. Specifically, when assessing feedback on academic English (see Table 5.17), the highest mean score was assigned to feedback from thesis advisors (TFEED6), surpassing the scores for feedback from tutors and peers. Similarly, when evaluating the feedback on the content of their work, the highest mean score was attributed to thesis advisors (TFEED5). These findings suggest that from among the feedback respondents received from their advisors, tutors, and peers, they appreciated most and exhibited the highest satisfaction with the

feedback from their advisors, and the lowest mean score was observed in relation to the peer feedback.

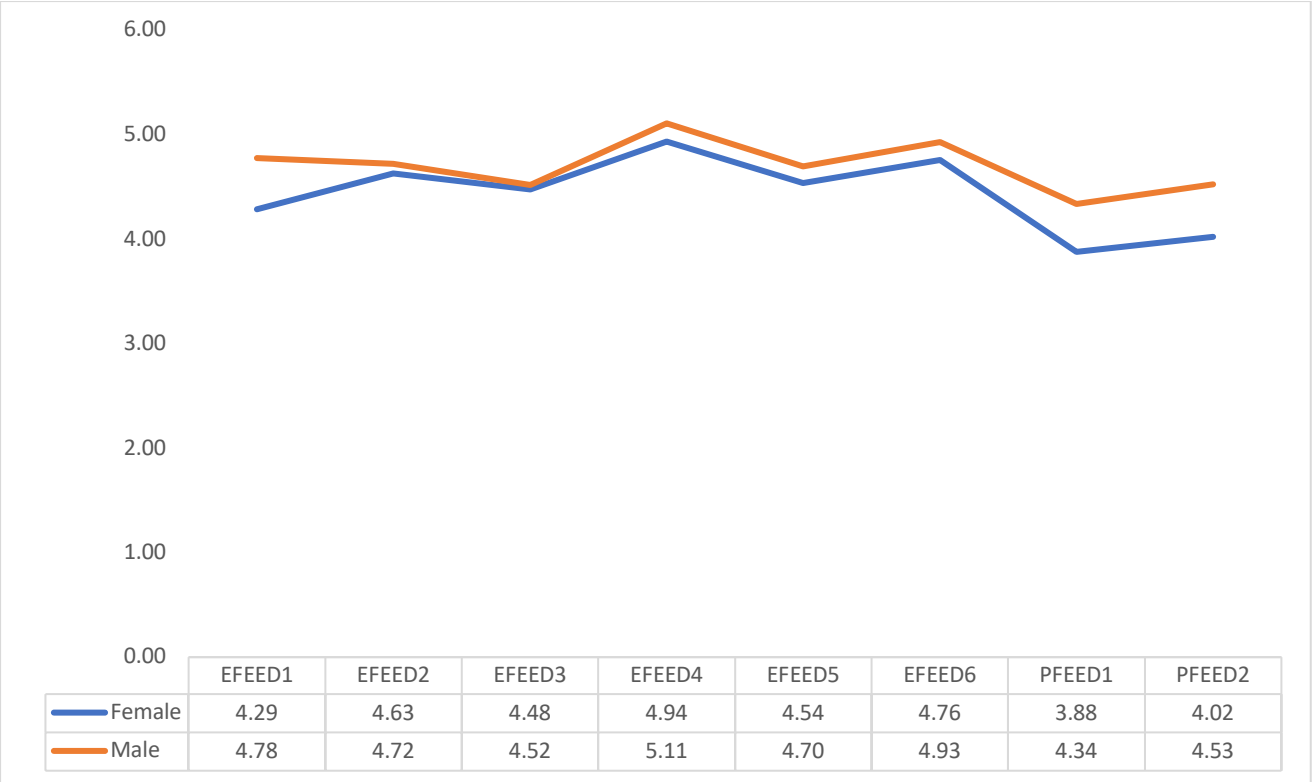
Table 5.17 Students' views on the quality of teachers' and peer feedback

	Teachers' feedback (TFEED)	**M**	**SD**
TFEED1	I had access to clear guidance on the requirements for English academic writing.	4.53	1.18
TFEED2	I got helpful feedback from my tutors on the content of my written assignments.	4.67	1.24
TFEED3	I got helpful feedback from my tutors on the academic English of on my written assignments.	4.49	1.32
TFEED4	Tutors in my doctoral program offer consistent feedback on my English skills.	4.11	1.43
TFEED5	The feedback from my thesis advisor was helpful on the content of my work.	5.01	1.1
TFEED6	My thesis advisor gave me detailed feedback on the academic English of my work.	4.61	1.37
TFEED7	I could use the feedback I received to improve my written work.	4.84	1.09
	Peer feedback (PFEED)	M	SD
PFEED1	The feedback I got from my peers helped me edit the English of my written work.	4.11	1.43
PFEED2	Peer feedback was useful about the content of my written work.	4.27	1.37

5.4.5.2. Gender differences in feedback perception

The mean scores female and male students gave regarding the quality of feedback revealed gender differences (see Fig.5.15). Female students indicated that they had access to clear guidance on English academic writing requirements, with a mean score of 4.29 (TFEED1), whereas male students scored significantly higher at 4.78 ($p<.001$). On item TFEED2, while not statistically significant, male students marginally outscored their female peers in receiving helpful feedback from tutors on content (male: 4.72 vs. female: 4.63, $p >.05$). A similar trend emerged on TFEED3: men scored tutors' feedback slightly higher (4.52) compared to female students (4.48) in receiving helpful feedback on their academic English ($p >.05$). Interestingly, feedback from thesis advisors was found significantly more helpful for male students in terms of content (male: 5.11 vs. female: 4.94, $p >.05$), whereas the feedback's helpfulness in terms of academic English was not statistically significant (male: 4.70 vs. female: 4.54, $p >.05$). Although the usefulness of feedback for improvement was not statistically significant, male students scored higher on this aspect (male: 4.93 vs. female: 4.76, $p >.05$). Women reported receiving significantly less helpful feedback from peers for editing their English (female: 3.88 vs. male: 4.34, $p < 0.05$). In terms of peer feedback (PFEED1 & PFEED2), male students appreciated it significantly higher than female students for both helping with academic English ($t(250)= -2.554$, $p<.05$) and content ($t(250)= -2.932$, $p<.01$).

Figure 5.15 Feedback assessments of female and male students



	EFEED1	EFEED2	EFEED3	EFEED4	EFEED5	EFEED6	PFEED1	PFEED2
Female	4.29	4.63	4.48	4.94	4.54	4.76	3.88	4.02
Male	4.78	4.72	4.52	5.11	4.70	4.93	4.34	4.53

5.4.6. Students' self-assessments of their abilities to cope with emotions

In this section, I present the analysis results of students' views regarding their perceived ability to cope with emotions while completing their doctoral tasks. The analysis explores differences according to gender, level of English proficiency, and academic years. No significant differences were found among age groups.

5.4.6.1. Students' self-assessed scores for coping with emotions

The results indicate that students overwhelmingly agreed with the statements on their ability to manage their stress and anxiety, as well as to maintain their level of motivation to complete their doctoral tasks (see Table 5.17).

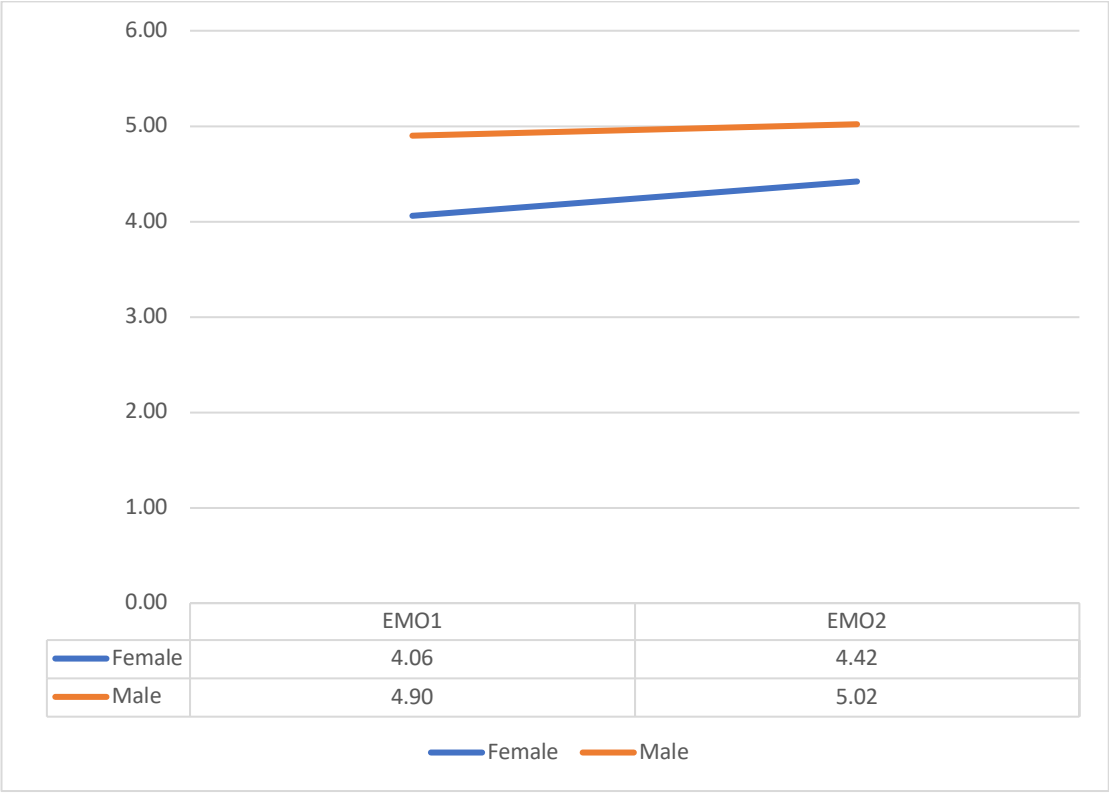
Table 5.18 Students' self-assessments of their ability to cope with emotions

	Coping with emotions (EMO)	M	SD
	While earning credits and working on assignments and publications,		
EMO1	I can handle my stress and anxiety successfully.	4.49	1.29
EMO2	I've managed to maintain my motivation to complete my doctoral work.	4.73	1.28

5.4.6.2. Gender difference in the ability to cope with emotional challenges

The data showed that male students received higher mean scores on self-assessing their abilities to cope with emotions (Figure 5.16); therefore, independent samples t tests were conducted to investigate if the differences were significant. On item EMO1, female students reported a mean score of 4.06 of how well they were able to manage stress and anxiety, whereas male students scored significantly higher at 4.90 ($p < 0.01$). Similarly, in response to item EMO2, women rated their capability to sustain their motivation for completing their doctoral work at 4.42, whereas men demonstrated a significantly higher average of 5.02 ($p < 0.01$). These findings underscore pronounced gender-related differences in how students perceive their emotional coping abilities. Although both males and females may experience emotional ups and downs and must be able to manage stress and anxiety, as well as foster and maintain their level of motivation, their own views indicate that they are able to do these differently during their doctoral studies. This outcome highlights the significance of addressing such disparities in academic and counseling support to promote all students' overall well-being and success. Clearly, women seem to need more support and encouragement than their male peers.

Figure 5.16 Gender difference in how well women and men think they can cope with emotions

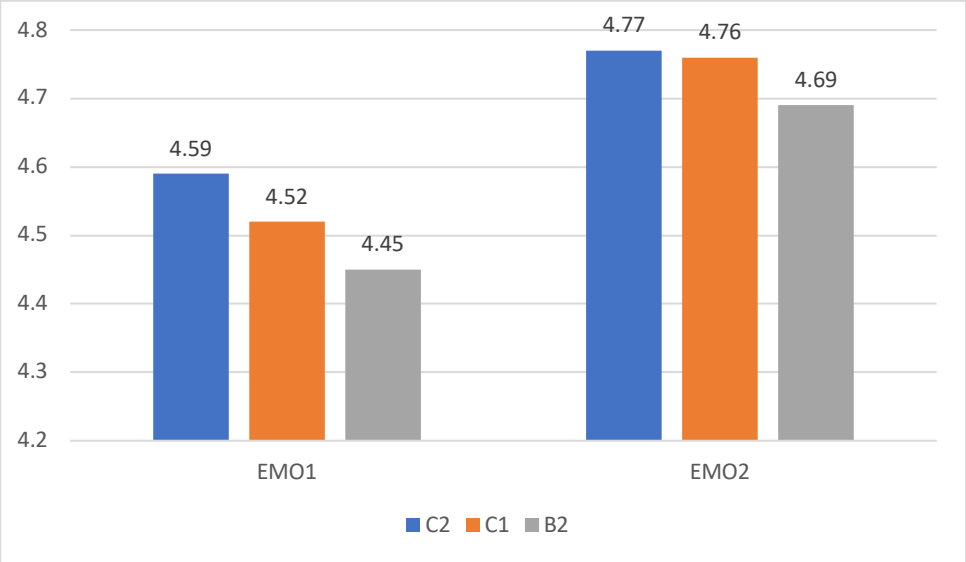


5.4.6.3. Differences among C2, C1 and B2 groups in coping with emotions

The results of the one-way ANOVA test did not reveal any significant differences among the C2, C1, and B2 groups. However, a clear pattern was observed (see Figure. 5.17), indicating that the higher the English proficiency level, the more confident the students were about their

ability to cope with stress and anxiety (EMO1) and to remain motivated until their doctoral tasks are completed (EMO2).

Figure 5.17 C2, C1 and B2 students' self-assessments of their ability to manage emotions



Regarding differences across academic years, I found that students in their senior academic years (4th-year PhD and 4+ years in PhD studies) tended to have lower self-assessed mean scores for coping with emotions (see Table 5.19). To further investigate, one-way ANOVA tests were conducted, revealing significant differences among the groups in reflecting on their ability to maintain their motivation while completing doctoral work (EMO2). Post hoc tests using Tukey HSD indicated that first-year PhD students' self-perceived mean scores were significantly higher than those of fourth-year PhD students (see Table.5.20).

Table 5.19 Self-assessments of ability to cope with emotions across academic years

	Coping with emotions (EMO)		M	SD
EMO1	I can handle my stress and anxiety successfully.	First-year PhD	4.57	1.09
		Second-year PhD	4.39	1.4
		Third-year PhD	4.61	1.32
		Fourth-year PhD	4.3	1.57
		8+ semester	4.2	1.1
EMO2	I've managed to maintain my motivation to complete my doctoral work.	First-year PhD	5.03	1.03
		Second-year PhD	4.73	1.14
		Third-year PhD	4.59	1.41

Table 5.20 Significant difference in the self-perceived ability to maintain one's motivation across academic years

	Mean Difference (I-J)	p	95% CI Lower	95% CI Upper
I've managed to maintain my motivation to complete my doctoral work.				
I (1st-year) vs. J (4th-year)	.77644*	0.013	0.1072	1.4457

Note. * $p < 0.05$. CI = Confidence Interval.

5.4.7. Students' assessments of EAW motivational factors

This section presents the analysis results of the factors that are supposed to influence students' motivation: they include their perceived EAW autonomy, EAW competence, and the quality of support they received from their respective doctoral programs. The analysis revealed no significant differences across academic years and age groups, thus here only differences between genders and different proficiency groups are presented.

5.4.7.1. Students' self-assessments of EAW autonomy, competence, and the DS support

The results indicated that the students exhibited confidence in their EAW autonomy (MOTI1) and the development of their EAW competence (MOTI2). Additionally, they expressed positive views regarding the quality of support received from their doctoral school (DS), as indicated by MOTI 3-5 (see Table 5.21).

Table 5.21 Students' assessments of their EAW autonomy, EAW competence and the DS support

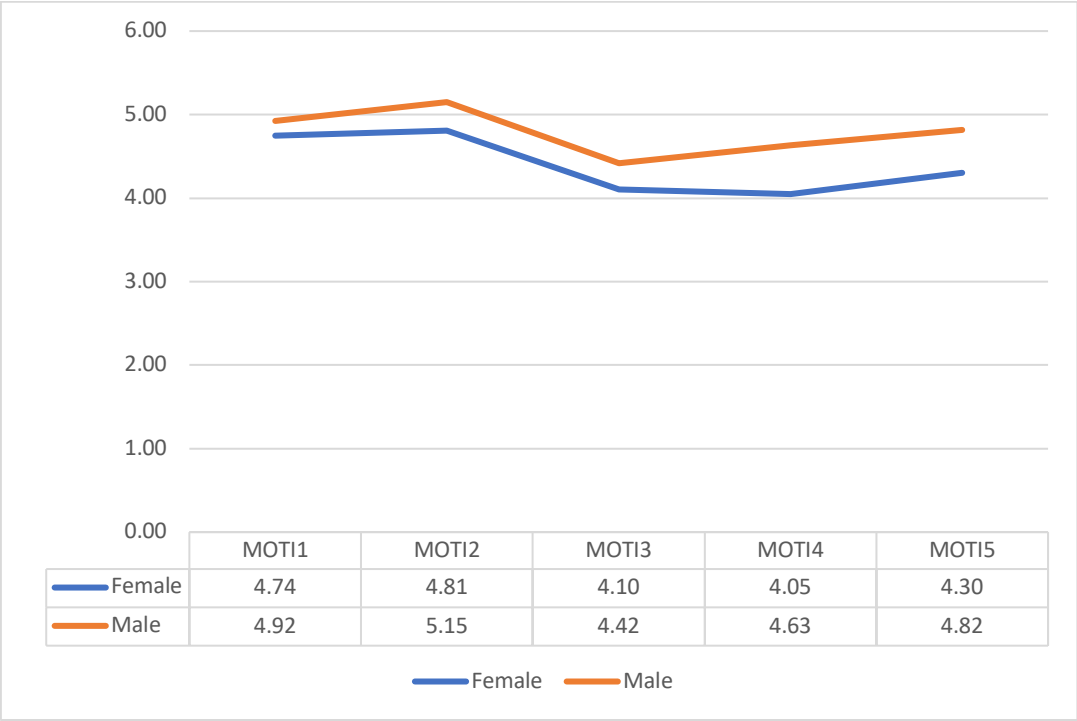
	Motivation (MOTI)	M	SD
MOTI1	I can manage to overcome the challenges I face in English academic writing.	4.83	1.00
MOTI2	I feel that my academic English writing abilities have improved.	4.98	0.97
MOTI 3	My doctoral program offers good support in English academic writing.	4.25	1.36
MOTI 4	My doctoral program has clear criteria on how written assignments in English are assessed.	4.34	1.32
MOTI 5	I get all the help I need to be successful.	4.56	1.27

5.4.7.2. Gender differences in the assessments of EAW autonomy, EAW competence, and DS support

The data suggests a different pattern between genders in the evaluations of their EAW autonomy, their EAW competence, and the DS support they received (Figure 5.18). The results of independent samples t tests unveil insights into how male and female students

perceive their autonomy, competence, and the available support. On item MOTI1, while not statistically significant ($p = 0.163$), male students slightly surpassed their female counterparts in their ability to surmount challenges encountered in English academic writing (male: 4.92 vs. female: 4.74). A significant gender gap is observed on item MOTI2: women reported an average score of 4.81 for improved academic English writing abilities, whereas men's mean score is significantly higher at 5.15 ($p < 0.01$). Similarly, on item MOTI3, female students indicated an average score of 4.10 for doctoral school support in EAW, whereas men had a higher mean of 4.42 ($p < 0.05$). MOTI 4 demonstrated a statistically significant gender disparity ($p < 0.01$), as female students scored lower in perceiving clear assessment criteria for written assignments in English (female: 4.05 vs. male: 4.63). Finally, results on item MOTI5 indicate that women rated the adequacy of the help they receive to succeed at a mean score of 4.30, whereas men gave a significantly higher average score of 4.82 ($p < 0.01$). These findings underscore gender-related variations in respondents' perceptions of autonomy, competence, and support. They point to potential areas for targeted improvement in doctoral programs and schools to enhance both academic performance and overall student experience for both men and women.

Figure 5.18 Gender difference in self-perceptions of EAW autonomy, EAW competence, and the DS support

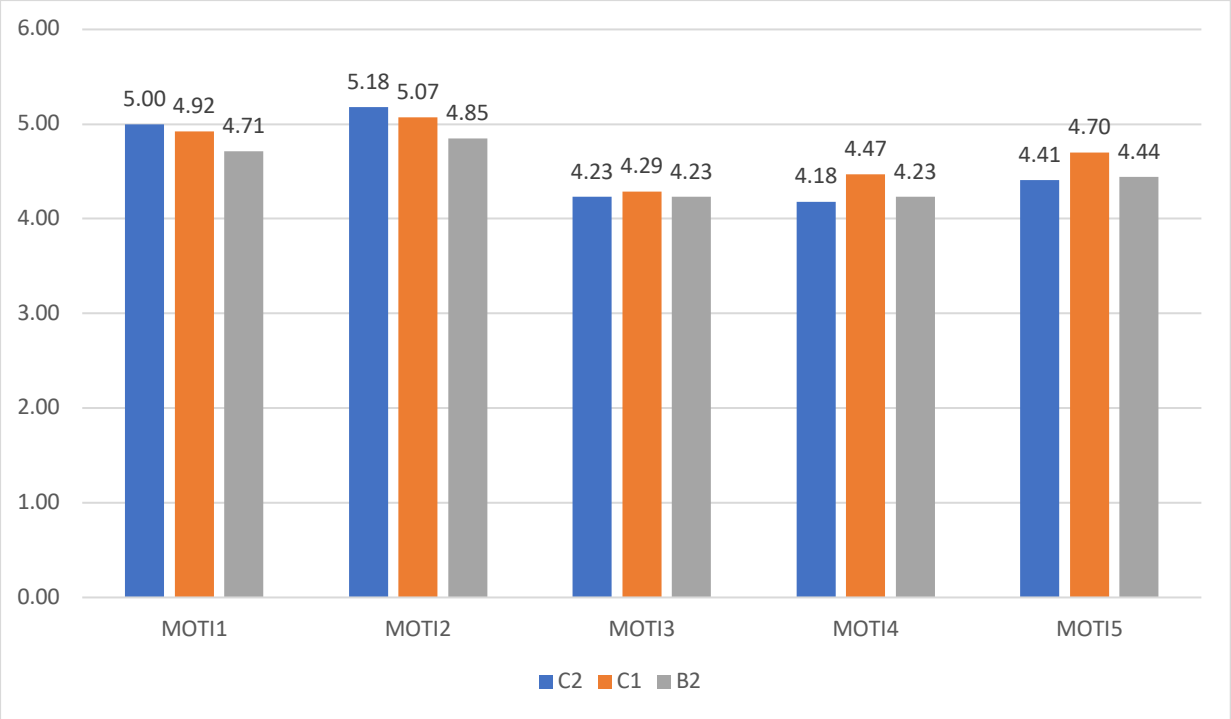


5.4.7.3. C2, C1 and B2 students' self-perceptions of their EAW autonomy, EAW competence and DS support

While the results of the one-way ANOVA test did not yield statistically significant differences, intriguing patterns emerged from the dataset. Among the three English proficiency groups, the highest, C2, demonstrated the most favorable self-assessed ratings for their EAW autonomy (MOTI1) and EAW competence (MOTI2), closely followed by the C1 group. The B2 group presented the lowest scores on these aspects. Additionally, an

exploration of the quality of support provided by the doctoral school (DS) revealed noteworthy insights: both the C1 and B2 groups displayed relatively higher satisfaction levels compared to the C2 group (MOTI4 and MOTI5) with regards to this support, even though the perception about EAW support seemed consistent among the three groups (MOTI3). These observations provide valuable insights into students' self-evaluations across varying proficiency groups, shedding light on their perceptions of autonomy, competence, and satisfaction concerning the support extended by their respective doctoral schools (Figure 5.19).

Figure 5.19 C2, C1 and B2 students' assessments of their EAW autonomy, competence, and DS support



5.4.8. The relationships between EAWN and the other constructs in the study

To address RQ8, a correlational analysis was conducted to examine the relationships among all the variables and English academic writing abilities at the time when students filled in the survey. The findings are presented below, with a summary provided in Table 5.22. English literacy at the start of the PhD program exhibited a positive correlation with both English academic writing at the start ($r = .609$, $p<.01$) and English academic writing abilities now ($r = .584$, $p<.01$). This suggests that a higher level of English literacy at the beginning of the program is associated with better EAW skills both initially and currently. These results emphasize the importance of a solid foundation in English literacy for developing and maintaining EAW proficiency.

English academic writing at the start of the PhD program showed a moderate positive correlation with English academic writing abilities at the current point of PhD studies ($r = .648$, $p<.01$). This correlation indicates that strong writing skills in academic English at the beginning of the program tends to be related to good EAW years later. It underscores the

significance of good writing abilities upon entry as an indicator of probable long-term success in academic writing.

Research knowledge about the actual field of study, research methods and abilities to conduct research tasks at the start of the PhD program displayed a moderate positive correlation with both English academic writing at the start ($r = .530$, $p<.01$) and English academic writing abilities now ($r = .557$, $p<.01$). Although these correlations are moderate, they still suggest a positive relationship between research knowledge and EAW abilities. These findings highlight the interaction between research knowledge and effective academic writing.

English academic reading abilities demonstrated a moderate positive correlation with English academic writing at the start ($r = .505$, $p<.01$) and a strong positive correlation with English academic writing abilities at the point when the survey was filled in ($r = .792$, $p<.01$). These results emphasize the stronger interconnection between reading and writing competencies and underscore the importance of a comprehensive approach to academic language development during doctoral studies.

Research knowledge and abilities in conducting research tasks at the current stage in PhD studies exhibited a strong positive correlation with current English academic writing abilities ($r = .847$, $p<.01$). This outcome indicates that a higher level of current research knowledge is strongly associated with enhanced writing abilities in English. The findings suggest that at the advanced level these two areas are intertwined. Students who are more confident about their knowledge of their field of research, the methods they need to use, and their abilities to use them, are also better at putting their ideas into appropriate academic English. Continuous improvement of knowledge about methods and staying up to date with research developments can significantly contribute to improving students' academic writing skills in English.

Furthermore, the ability to cope with emotions, challenges in motivation, and to benefit from feedback displayed weak to moderate positive correlations with English academic writing abilities now (ranging from .297 to .464; $p<.01$). Although these correlations were not as strong as the ones on the other variables, they suggest that these psychological factors may still play a role in supporting students' development in their EAW abilities.

It is worth noting that despite the weaker correlations, the ability to manage emotions exhibited a strong positive relationship with motivational factors ($r = .757$, $p<.01$), indicating that individuals who felt autonomous in their EAW, and perceived their EAW competency and community support positively, tended to manage their emotions better. Additionally, how respondents reflected on feedback also showed a strong positive relationship with motivational factors ($r = .750$, $p<.01$), suggesting that receiving constructive feedback can contribute to increased motivation. These findings indicate that while the direct correlations between these psychological factors and English academic writing abilities may not be robust, there is a meaningful interplay among these factors. Feedback and the ability to cope with emotions appear to be closely tied to motivational factors, indicating the potential indirect influence of emotional well-being and feedback on writing motivation and subsequently, EAW abilities. Overall, these relationships add depth to our understanding of

the complex interplay between psychological factors and English academic writing abilities in the dataset of 255 doctoral students.

In sum, the results of the correlational analysis provide valuable insights into the complex interplay among various factors and English academic writing abilities. They underscore the importance of English literacy skills upon starting doctoral studies, ongoing knowledge development, and the role of psychological factors in supporting and enhancing EAW proficiency.

Table 5.22 Correlations among the factors in the survey

	ELS	EAWS	RS	EAR	EAWN	RN	EMO	MOTI	TFEED	PFEED
English literacy at the start of PhD studies (ELS)	1									
English academic writing at the start of PhD studies (EAWS)	.609**	1								
Research knowledge at the start of PhD studies (RS)	.329**	.530**	1							
English academic reading (EAR)	.520**	.505**	.389**	1						
English academic writing now (EAWN)	.584**	.648**	.457**	.792**	1					
Research knowledge now (RN)	.484**	.530**	.557**	.701**	.847**	1				
Ability to cope with emotions (EMO)	.217**	.338**	.393**	.297**	.453**	.496**	1			
Motivation (MOTI)	.254**	.253**	.384**	.300**	.433**	.481**	.757**	1		
Teachers' feedback (TFEED)	.159*	.208**	.329**	.304**	.348**	.421**	.439**	.698**	1	
Peer feedback (PFEED)	0.034	0.062	.250**	.134*	.136*	.221**	.355**	.498**	.594**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

5.4.9. How students' current EAW abilities are impacted by the other constructs in the study

To address RQ9, a regression analysis was conducted to examine the impact of several variables on English academic writing abilities now (EAWN). The results indicate a strong positive correlation between the predicted values and the actual values ($r = 0.917$), suggesting that the regression model is reliable. Furthermore, the R^2 value of 0.84 indicates that approximately 84% of the variance in EAWN can be explained by the independent variables, indicating a substantial explanatory power (see Table 5.23).

Table 5.23 Summary of regression analysis

R	R Square	Adjusted R Square	S.E. of the Estimate
.917[a]	.840	.834	.35143

As the regression model is statistically significant (R^2 = 0.84, F (9, 245) = 143.275, p < 0.001), this outcome indicates that considering all the independent variables together as predictors, they collectively have a significant impact on explaining the variance in participants' English academic writing abilities (EAWN) at the current point in their doctoral studies (see Table 5.24).

Table 5.24 Analysis of variance (ANOVA) summary

	Sum of Squares	Mean Square	F (9, 245)	P
Regression	159.250	17.694	143.275	.000[b]
Residual	30.258	.124		
Total	189.508			

Examining the individual predictors (see Table 5.25), I found that English literacy at the start (ELS) of the PhD program played a positive role in EAWN, although the coefficient was not statistically significant (β = 0.029, p = 0.147). On the other hand, English academic writing abilities at the start (EAWS) of the PhD program showed a significantly positive impact on EAWN (β = 0.031, p < 0.001), suggesting that higher writing abilities at the beginning of graduate studies are strongly related to improved English academic writing abilities at the current point.

However, research knowledge at the start (RS) of the PhD program did not demonstrate a positive impact on EAWN, despite being statistically significant (β = 0.025, p = 0.002). This suggests that having more research knowledge initially may not necessarily translate into better English academic writing abilities later on.

English academic reading abilities (EAR) exhibited a positive and statistically significant impact on EAWN (β = 0.039, p < 0.001). This indicates that higher English academic reading abilities are associated with improved English academic writing abilities. Additionally, research knowledge at the current point of PhD studies (RN) was found to have a significantly positive relationship with EAWN (β = 0.042, p < 0.001), suggesting that better research knowledge at present is associated with improved English academic writing abilities for fulfilling doctoral requirements.

In contrast, the analysis indicates that feedback, the ability to cope with emotions (EMO), and motivation (MOTI) do not demonstrate a significant influence on EAWN. Despite their previously identified positive associations presented in section 5.4.8, these factors do not seem to exert a substantial impact on participants' English academic writing abilities.

In summary, the regression analysis underpins the significance of certain factors such as English academic writing abilities at the start of doctoral studies, English academic reading abilities, and current research knowledge in predicting EAWN at the present PhD stage. However, factors like initial research knowledge, feedback and specific psychological aspects were found to exert limited influence on EAWN. The results also underscore the importance of continuous development in research knowledge as a potent contributor to improved English academic writing abilities.

Table 5.25 Regression coefficients and statistical significance

	B	β	t	p	95.0% Confidence Interval for B	
English literacy at start of PhD studies (ELS)	.043	.029	1.456	0.147	.147	-.015
English academic writing abilities at the start of PhD studies (EAWS)	.181	.031	5.909	0.000	.000	.121
Research knowledge at the start of PhD (RS)	-.080	.025	-3.206	0.002	.002	-.129
English academic reading abilities now (EAR)	.332	.039	8.468	0.000	.000	.254
Research knowledge now (RN)	.490	.042	11.760	0.000	.000	.408
Coping with emotions (EMO)	.016	.031	0.496	0.621	.621	-.046
Motivation (MOTI)	.085	.048	1.790	0.075	.075	-.009
Teachers' feedback (TFEED)	-.029	.036	-0.789	0.431	.431	-.100
Peer Feedback (PFEED)	-.027	.021	-1.297	0.196	.196	-.067

Note. Dependent Variable: English academic writing abilities now (EAWN)

5.5. Discussion

By using a large-scale quantitative survey, the present study investigated NNES doctoral students' current EAW abilities as well as how they changed over time. The study inquired also into their English literary backgrounds, their EAW abilities at the start of PhD studies, research knowledge and abilities both at the start and at the current point of PhD studies, English academic reading (EAR) abilities, coping with emotions, feedback they received, and motivation. The analysis of the data provided valuable insights into these areas and their interrelationships.

Regarding self-assessments of English literacy at the start of the PhD program (ELS), participants generally expressed a high level of agreement, particularly regarding their ability to comprehend English academic texts (RQ1). These positive self-assessments align with expectations for doctoral-level English proficiency (Grabe & Stoller, 2019) . It is noteworthy that all participants had at least a master's degree, which serves as a prerequisite for PhD entry in Hungary. This suggests that their high self-assessed scores on English literacy can be attributed to their prior experience and educational background (Hadley, 2015).

The results of RQ2 align with those of RQ1: they revealed that participants were confident about their EAW abilities (EAWS) at the beginning of the program, especially in writing literature reviews. These self-assessments reflect participants' educational backgrounds, as writing a literature review is also a section in a master's thesis. They are also in harmony with their positive self-assessment on their ability to "comprehend English academic texts well" (this item is included in RQ 1 analysis). Over time, participants' self-assessed scores for EAW abilities significantly increased, indicating development in writing skills, particularly in academic writing proficiency and discourse competences (Friedman, 2021; Hyland, 2013). Comparing the self-assessments of EAW abilities at the start and the current point of the PhD program, the results indicated a significant improvement in the participants' self-assessed mean scores. The paired samples t-tests confirmed that participants felt a sense of improved mastery in their writing abilities, as their current self-assessments were significantly higher than those at the start. These findings suggest that the doctoral students perceived their development in EAW over the course of their studies, reflecting the impact of the PhD program on their writing skills (Coffin et al., 2005; Gupta et al., 2022). Notably, while participants showed improvement in several areas, the findings indicated that self-assessed scores related to critical thinking, such as being critical and drawing conclusions, remained relatively lower. The persistence of lower scores in critical thinking suggests areas for continued growth and development. This finding is consistent with previous findings suggesting that developing critical thinking skills is a complex process that takes time and deliberate effort (Aitchison et al., 2012; Almatarneh et al., 2018; Bean & Melzer, 2021; Bruce, 2018; Odena & Burgess, 2017; Swales & Freak, 2012). It underscores the need for targeted interventions and instructional strategies that explicitly focus on enhancing critical thinking skills in doctoral writing programs.

Based on the analysis of the dataset on RQ 3, students initially perceived themselves knowledgeable in their research area, research design, and research methodology, and about writing literature reviews. However, doctoral dissertations require more than knowing these domains (Ismail & Meerah, 2012). Students must make original and substantial contributions, addressing gaps in literature. Thus, they need to be research-informed and capable of formulating critical research questions that guide the entire research process. Feasibility, including resource availability and the collection of reliable data using valid instruments, are also crucial. Challenges may arise during dataset analysis, as participants' responses are beyond students' control.

Disseminating research findings in academic English presents another challenge. At the start of their PhD studies, students' scores on designing research instruments, formulating research questions, analyzing data, and writing publishable papers in English were modest. This indicates that "know-how", procedural knowledge, takes time to develop, compared to "know-that", that is content knowledge (Murakami et al., 2011, p. 259). Academic experiences prior to joining the PhD programs help students widen their scope of respective research fields and develop their research abilities to conduct studies at the doctoral level. These findings are in line with outcomes of previous studies (Castelló et al., 2021; Ismail & Meerah, 2012; Mills, 2009; Mosyjowski & Daly, 2020; Rogers & Göktaş, 2010).

Moreover, the findings showed that the participants' self-assessed research knowledge scores improved significantly over time, reflecting their development in the skills required to conduct doctoral research. These results are consistent with previous studies (Ismail & Meerah, 2012; Krish et al., 2017; Olehnovica et al., 2015; Oyedokun et al., 2019; Perez et al., 2022; Vekkaila et al., 2012) and highlight the importance of prior academic experiences in widening students' research abilities and understanding of their respective fields.

In terms of students' EAR self-assessments (RQ4), the findings indicate that the 255 NNES doctoral students expressed confidence in their EAR abilities. However, when examining the specific areas of lexical knowledge, there was variation in self-assessed mean scores. The lowest mean score was observed for EAR1, which evaluated comprehension of technical words or phrases. On the other hand, the highest mean score was obtained for EAR2, indicating better ability to understand the details in long complex texts without relying on a dictionary. The self-assessment of EAR3, which directly measured the comprehension of journal articles without rereading difficult sections, revealed a slightly lower mean score compared to the items assessing students' critical thinking skills (EAR4 and EAR5). It is also understandable that novice scholars might not understand all the concepts they come across in academic texts, especially when they are not already familiar with discipline-specific terms used in their field; therefore, the findings of EAR1 and EAR3 are consistent. The overall findings of EAR self-assessments suggest that even though students had confidence in their reading comprehension abilities, there was still room for further development in comprehending academic texts without the need for rereading as well as in enriching their technical lexicon. These findings resonate with the literature (Badenhorst & Xu, 2016; Chatterjee-Padmanabhan & Nielsen, 2018; Jomaa & Bidin, 2017; Odena & Burgess, 2017) and highlight the importance of continuing to enhance discipline-specific lexical knowledge to further improve doctoral students' proficiency in English academic reading and writing.

The participants held positive views of the feedback they received from various sources. Feedback from thesis advisors gained the highest mean score, underscoring the pivotal role of mentorship and personalized guidance in doctoral programs. This outcome also aligns with the established literature emphasizing the significance of strong mentorship in fostering academic writing abilities (Adamson, 2012; Barrett et al., 2017; Brill et al., 2014; Caffarella & Barnett, 2000; Kamler & Thomson, 2014). The positive perceptions of feedback from tutors and peers further reinforce the multifaceted nature of the feedback ecosystem in doctoral programs. Tutors, serving as additional sources of guidance, also contribute to participants' academic writing development. Similarly, the positive evaluation of feedback from peers highlights reliance on peer learning dynamics inherent in doctoral education, where collaborative engagement enhances academic writing proficiency (Basturkmen et al., 2014; Caffarella & Barnett, 2000; Hattie & Timperley, 2007; Kamler & Thomson, 2014).

The participants' high regard for feedback aligns with broader discussions on the pivotal role of feedback in academic writing development (Kamler & Thomson, 2014). Effective feedback, characterized by its specificity and constructive nature, emerged as a catalyst for participants' progress in academic writing. The findings suggest that participants perceived

feedback not merely as evaluative but also as a formative means for refining their writing skills. These results also highlight the nature of academic socialization in developing discourse competence (Duff, 2010b).

As for participants' self-assessments of their abilities to manage their emotions in challenging situations (RQ6), the results revealed a positive perception of their stress and anxiety management in completing their doctoral work. The analysis of participants' responses suggests a favorable outlook on their emotional well-being in the context of doctoral studies. The positive self-assessments indicated that participants felt confident about handling emotional challenges such as stress and anxiety associated with completing their doctoral writing tasks. This aligns with key findings in the literature that recognize the emotional demands of doctoral studies and underscores the importance of effective coping mechanisms (Cornwall et al., 2019; Dickerson et al., 2014; Rico & Bunge, 2021; Yu-Whattam, 2020). Additionally, the participants' confidence in managing stress and anxiety indicates that emotional resilience is a crucial component of doctoral success(Devine & Hunter, 2016; Yu-Whattam, 2020) .

Examining participants' assessments of their EAW autonomy, competence, and support from their doctoral school (RQ7), the analysis revealed that participants generally reported positive perceptions of their autonomy and competence in EAW. Thus, respondents felt a sense of independence in their writing endeavors and believed in their ability to meet the academic writing requirements of their program. The positive self-assessments in autonomy and competence are in line with the literature emphasizing the importance of fostering autonomy in doctoral students (Buckingham, 2008; Carter, 2011; Cotterall, 2011; Vickers & Ene, 2006). Autonomy and competence in EAW allow students to develop their voice and style, contributing to the formation of scholarly identities(Botelho de Magalhães et al., 2019; Fowler Jr, 2013; Johns & Swales, 2002; Swales, 2019; Vickers & Ene, 2006).

Participants also expressed satisfaction with the support they received from their doctoral school. This finding underscores the importance of institutional support in fostering a positive learning environment for academic writing development, as outlined in language socialization theory (Duff, 2010a, 2010b; Duff & Anderson, 2015). The positive perception of support emphasizes the role of institutional support in doctoral success. In the context of EAW, doctoral schools play a pivotal role in providing resources and guidance necessary for students to excel in their writing tasks (Vickers & Ene, 2006). According to Ryan and Deci (Deci & Ryan, 1980; Ryan & Deci, 2017), learners must feel a sense of having control over their learning process, making progress in the skills they are developing, and being related and supported in their respective community to remain motivated along their journey. The results in response to RQ 7 revealed that the students felt these three basic needs were met; thus, they maintained their positive outlook and motivation. These results explain the students' progress identified in relation to RQ 2, their confidence in their ability to handle emotional challenges identified in RQ 6, and their overwhelmingly positive perceptions of their abilities shown in the study.

The results revealed significant gender differences in the respondents' self-assessments, as male students consistently assigned themselves higher scores compared to their female peers, both at the start of their doctoral journey and at the time of completing the survey. This finding aligns with previous research that has also documented gender discrepancies in self-assessment and confidence levels (Ariel et al., 2018; Reilly et al., 2022; Sarsons & Xu, 2021). Specifically, these findings resonate with the literature on NNES doctoral students' self-assessed abilities reported in numerous studies (Andersen et al., 2020; Beaudry et al., 2023; Jones et al., 2023; Madsen et al., 2022; Muric et al., 2021). These findings underscore the persistence of gender differences in self-assessed confidence levels among doctoral students, particularly concerning their research capabilities (Brown & Watson, 2010; Carter et al., 2013). These may arise due to societal gender norms shaping perceptions of confidence and competence (Ariel et al., 2018), experiences of imposter syndrome particularly prevalent among women (Reilly et al., 2022), biases and discrimination encountered in academia (Sarsons & Xu, 2021), disparities in academic publishing and recognition favoring men (Andersen et al., 2020; Madsen et al., 2022), and institutional cultures that may inadvertently disadvantage female students, influencing their perceptions of their own abilities (Brown & Watson, 2010; Carter et al., 2013).

The findings also revealed the key role the general level of English proficiency plays: significant differences were found among the respondents with C2, C1, and B2 proficiency level certificates: higher proficiency was systematically associated with higher self-assessed scores on various aspects of English academic writing, reading, and research knowledge, like in previous studies (Grabe & Zhang, 2013; Jafari, Jafari, et al., 2018; Lin & Morrison, 2021). Additionally, the findings indicated a positive correlation between proficiency level and the development of research knowledge and skills in English-medium international doctoral programs. These results support the claim that a higher level of English proficiency contributes to NNES doctoral students' research and writing abilities in English-medium PhD programs in meaningful ways. Previous research also highlighted the importance of a strong command of English for active participation in academic activities and timely graduation from PhD programs (Björkman, 2018; Hladchenko, 2023; Huang, 2010; Langum & Sullivan, 2017; Mykhyda et al., 2019; Ramírez-Castañeda, 2020; Son & Park, 2014). These findings offer further evidence that English proficiency is a critical factor contributing to NNES doctoral students' success in producing academic texts in their academic lingua franca. This outcome highlights the need for continued language support for this population.

The findings suggest that self-assessed abilities among doctoral students vary across different academic years, indicating the impact of academic progress on students' perceptions and development. This observation is in line with previous research, which has consistently shown that doctoral students' self-perceptions tend to improve as they advance in their studies and accumulate experience and knowledge (Krish et al., 2017; Oyedokun et al., 2019; Vekkaila et al., 2012). Such improvement is a natural expectation in programs catering to ambitious and talented students, where growth and development are integral components of the educational journey. The findings suggesting improvements in doctoral students' self-perceptions as they progress through their studies can be attributed to various interconnected

factors. First, doctoral students accumulate valuable experience and knowledge through research, coursework, and academic activities, enhancing their confidence and competence in their research abilities (Ismail & Meerah, 2012; Olehnovica et al., 2015). Second, doctoral programs provide opportunities for students to develop a wide range of skills, including critical thinking, problem-solving, research methodology, and academic writing. As students navigate through their doctoral journey, they continuously refine and enhance these skills, leading to an improvement in their self-assessment of abilities (Jung, 2018; Perez et al., 2022). Third, as doctoral students make progress in their studies, they gain confidence in their abilities to conduct research independently and contribute meaningfully to their field of study. This increased confidence is reflected in their self-perceptions of competence and proficiency (Murakami et al., 2011).

The correlation analysis (RQ8) revealed significant positive relationships between English literacy at the start of PhD studies (ELS) and EAW at the beginning of graduate studies (EAWS), as well as between ELS and EAR. Similarly, EAWS showed significant positive correlations with EAR and English academic writing at the current point of PhD studies (EAWN). Moreover, participants' knowledge about research at the start of their studies (RS) was moderately and positively correlated with ELS, EAWS, and EAR, indicating the interrelatedness of these abilities. Additionally, emotional well-being (EMO) and motivation (MOTI) showed moderate positive correlations with academic performance indicators, highlighting the influence of these factors on students' overall success, in line with what was found in earlier studies (Matheka et al., 2020; Richardson et al., 2012; Sverdlik et al., 2018; Zhou, 2015). Furthermore, how respondents perceived the feedback they got from advisors and tutors (TFEED) and peer (PFEED) resulted in strong positive correlations with motivational factors, indicating its key role in supporting students' motivation and engagement, as emphasized in previous studies (Carless et al., 2011; Hattie & Timperley, 2007).

According to the regression analysis (RQ9), participants with better writing abilities at the beginning of their graduate studies (EAWS) improved their EAW skills to a higher level at the current point (EAWN), revealing the enduring influence of initial writing proficiency on sustained academic writing competence. This relationship indicates that earlier level of proficiency in EAW significantly contributed to long-term success in academic writing (Coffin et al., 2005). Moreover, better reading comprehension was also associated with higher level of EAW skills, indicating the interconnectedness of reading and writing competencies, supporting the idea that a comprehensive approach to academic language development, including reading skills, contributes significantly to enhanced writing abilities (Grabe & Kaplan, 2014).

The regression analysis provided insights into the factors that significantly contributed (about 84%) to participants' EAW abilities at the current point. It underscores the enduring impact of initial writing proficiency, the interconnectedness of reading and writing competencies, and the importance of continuous development of research knowledge. These findings indicate that focusing on writing skills early, fostering reading-writing integration, and promoting

continuous research knowledge development can be key strategies to enhance doctoral students' English academic writing abilities. These results are in line with previous findings in the literature (Jeyaraj, 2020; Kotamjani et al., 2018; Lin & Morrison, 2021; Murakami et al., 2011; Yeh & Inose, 2003).

To sum up, the findings of this study revealed various facets of NNES doctoral students' EAW abilities, shedding light on their self-assessments, developmental trajectories, and the most influential factors. The results underscore the importance of early writing proficiency, ongoing reading-writing integration, and continuous research knowledge development.

5.6. Conclusions

The quantitative study explored multiple facets of EAW abilities at the doctoral level, encompassing knowledge and skills in conducting doctoral research, English academic reading abilities, perceptions of feedback quality, coping with emotions, and factors influencing EAW motivation. The investigation revealed an increase in participants' confidence regarding both their research knowledge and writing abilities. Irrespective of gender, proficiency levels, and years of study, participants self-assessed statistically significant improvements in their EAW abilities compared to the initial stages of their PhD programs. This upward trend underscores the developmental nature of doctoral students' EAW skills during their academic journey.

The findings emphasize the interconnectedness among factors influencing NNES doctoral students' EAW abilities, extending to coping with emotions, EAW autonomy, EAW competence, doctoral school support, and feedback from advisors, peers, and tutors. These aspects emerged as positively associated domains throughout the participants' doctoral EAW journey, aligned with theories of language socialization (Duff, 2010b; Duff et al., 2019; Duff & Anderson, 2015) and self-determination theory (Deci & Ryan, 1980; Ryan & Deci, 2017). This interconnectedness highlights the need for a holistic approach to fostering EAW skills, acknowledging the dynamic relationships between various competencies. The study is in harmony with what the previous literature established (Johns, 2011; Lee & Swales, 2006; Swales & Freak, 2012), affirming the complex nature of EAW development at the doctoral level for NNES novice writers (Aitchison et al., 2012; Jafari et al., 2018; Jomaa & Bidin, 2017; Odena & Burgess, 2017; Ramírez-Castañeda, 2020). The findings, however, go beyond previous discussions, as they integrate not only various factors but also how they change over the years. This temporal aspect and the range of variables make the study stand out. Moreover, the findings revealed that the students' English literacy background, initial EAW abilities, research abilities both at the start of PhD studies and at the current point, academic reading abilities, feedback, managing their emotions and motivation collectively explained 84% variance of their current EAW abilities. As no previous studies have examined this aspect, this study is innovative in this regard. It adds special value to the literature and offers valuable insights into how NNES doctoral students' EAW abilities are shaped over the years, and how they can be developed.

This large-scale quantitative study is built upon consistent findings from selected studies overviewed in Chapter 2 and the exploratory phase of this research project presented in Chapter 5. It offers a unique contribution to the field by providing insights into NNES doctoral students' needs and self-assessed abilities from 49 different countries, creating a new perspective in the field of EAW. The positive associations identified in this study validate and reinforce the interconnected nature of EAW abilities, research skills, and emotional factors, enhancing the understanding of NNES doctoral students' EAW abilities and needs. Moreover, the research added new insights into doctoral programs in the Hungarian context, where English serves as the lingua franca for both students and faculty. This unique educational landscape, coupled with the diversity of participants, contributes to the richness of the findings. The absence of similar research in Hungary positions this study as a pioneering effort, providing valuable insights into the EAW dynamics within the country's doctoral education context.

In conclusion, the study provides a comprehensive picture of NNES doctoral students' EAW abilities and needs, unraveling the interplay of factors influencing their doctoral EAW development, offering both theoretical and practical contributions to the field. The findings indicate increased confidence in both research knowledge and writing abilities among participants. This research underscores the importance of holistic approaches to fostering EAW skills and contributes valuable insights to the ongoing discourse on NNES doctoral students in English-medium PhD programs.

CHAPTER 6. DOCTORAL STUDENTS' ENGLISH ACADEMIC WRITING EXPERIEINCES THROUGH METAPHOR ANALYSIS

Chapter 6 presents a metaphorical analysis of NNES doctoral students' reflections on their English academic writing (EAW) experiences during their doctoral studies. The chapter consists of six sections: the introduction sets the stage for the subsequent exploration. The next part provides an overview of using metaphors as a qualitative research instrument. The method section includes the research question, participants, the instrument used for eliciting metaphors, and the data analysis procedure. The last sections present and discuss the findings, and conclude by summing up the key insights gained in the study, the limitations, and the way forward.

6.1. Introduction

This qualitative study aims to explore the lived experiences of 255 NNES doctoral students who participated in the large-scale survey presented in Chapter 5. The focus is on understanding how the participants conceptualized their EAW experiences as novice writers while working towards the successful completion of their PhDs in international doctoral programs. To achieve this aim, an open-ended item was included at the end of the survey. It invited participants to share personal metaphors to offer new insights into their lived experiences and an emic perspective on their EAW journey. Through this metaphorical exploration, I hope to uncover nuanced insights into the participants' subjective viewpoints to offer a deeper understanding of their emic perspectives on their EAW experiences. This chapter is a revised version of the published study by Phyo et al (2023a).

6.2. The use of metaphors as a qualitative research instrument

Traditionally, a metaphor is seen as a literary device used in poetry and people assume that metaphors do not play an important role in their day-to-day life. However, in the book *Metaphors we live by,* Lakoff and Johnson (1980) explained how metaphors play a key role in in human cognition by making five claims: (1) a metaphor is not only a linguistic phenomenon, it is also used to allow us to effectively convey concepts we form in our mind; (2) a metaphor is used not only for artistic and rhetorical purposes, it is also used for better understanding and vivid visualization of concepts we would like to convey; (3) a metaphor is often not based on similarity, even though traditionally there should be a resemblance between the two things that people compare by using a metaphor; (4) people need no special talent to be able to use metaphors, everyone can use them effortlessly in their everyday life; and (5) the assumption that people can live without metaphors, as it is just a figure of speech, is wrong, because metaphors are part of an inevitable process of human thought and reasoning.
Therefore, metaphors are not only used for comparing features of two entities, but rather for forming meaning out of the interaction of those two features (Lakoff & Johnson, 1980). Thus**,** metaphors are a source of cognitive priming which helps us elicit semantic, behavioral, and affective responses(Lakoff & Johnson, 1980) and they can serve as an essential component of communication, reflecting and connecting the very core schemata of human thought and action 'to carry across' meaning (Schön, 1987). Kövecses (2003) characterized the main

features of metaphors as having a source and a target domain with multiple conceptual connections, leading to the creation of some underlying entailments. This is why metaphors can effectively function as a cognitive mediational tool for negotiating meanings and they are powerful in shaping human thoughts. "The people who get to impose their metaphors on the culture get to define what we consider to be true" (Lakoff & Johnson, 1980, p.160). Therefore, using metaphors helps others see the way we see things, justifying our thoughts and convincing our points of view, thereby making communication more effective (Lakoff & Johnson, 1980).

Metaphors allow us to (1) express the inexpressible (impressibility), (2) convey complicated abstract concepts that we form in our head successfully (vividness), and (3) transfer all the ideas that we would like to transfer by using a small linguistic package (compactness) (Ortony, 2007). Therefore, metaphors are means of conveying an exact reflection of what we feel and think without lexical limitations. They help us express all that we can imagine, regardless of the question whether it can happen in reality or it really exists (Lakoff & Johnson, 1980; Schön, 1987). Based on the idea that metaphors are efficient representations of self-reflection, metaphor analysis has been used in educational contexts as a research instrument and a thought elicitation technique to discover respondents' innermost beliefs and feelings (Asmali & Çelik, 2017).

As "we learn by reflecting on what has happened" (Handy, 1998, p.19), asking students to construct a metaphor on their learning process is a way of providing them with an opportunity for self-reflection. Levin and Wagner (2006) explained the process of constructing a metaphor and why metaphors can be used to tap into our inner thoughts that we ourselves are not aware of: "when we construct a metaphor, we intuitively reach into parts of ourselves that may be beyond our self-awareness" (p. 238). The key role of metaphorical thinking in educational contexts for conceptualizing the learning process is stated by Elliot (1984, p. 39): metaphors are widely used in educational discussions and fulfil a variety of functions, such as introducing fresh perspectives, making illuminating comparisons and contrasts, picking out kinds of phenomena not yet named, emphasis, illustration, enlivening dull writing, and many others. As such, metaphors are an integral part of everyday educational narratives.

As metaphors help us describe abstract educational ideas and concepts vividly, eliciting them is effective when students use them to explain what their learning experience is like. Previous research (Aydin & Baysan, 2018; Huang, 2010; Lampi & Paulson, 2016) showed that metaphor analysis allows researchers to understand phenomena from the participants' emic perspectives. Emic data means information supplied by participants (Cresswell, 2012a) and emic refers to "the type of information being reported and written into ethnography when the researcher reports the views of the informants" (Creswell & Poth, 2007, p. 242).

An additional advantage of metaphor analysis is that it is reliable for "making otherwise unvoiced assumptions explicit" (Zheng & Song, 2010, p. 43). Metaphor analysis can help teachers see things through the eyes of students and it allows them to adjust their instruction,

materials, and activities to make sure that they offer what the students need and by so doing, the teaching and learning process becomes learner centered (Hamouda, 2018).

6.3. Method

6.3.1. Research question

What metaphors do doctoral students use to characterize their English academic writing experiences during their PhD studies?

6.3.2. Participants

A total of 255 doctoral students participated in the study. Detailed information of them was presented in Chapter 5 (section 5.4.).

6.3.3. Data collection instrument

In order to investigate how participants conceptualized and described their lived experiences during their EAW process, the survey (Chapter 5) included a simple open-ended item that prompted participants to express their personal metaphors related to writing an academic paper in English. As presented in section 6.2, metaphor has long been used as a research tool in educational contexts. Following the established research practices (Babbie, 2020; DeVellis & Thorpe, 2021; Polit & Beck, 2006), the metaphor elicitation task was this: Please continue this sentence "Writing an academic paper in English is like….". The dataset of the answers was assessed by two experts and they confirmed that the elicitation was suitable for fulfilling the research aim.

6.3.4. Data analysis

Elicited metaphors were interpreted as CONCEPTUAL DOMAIN (A) is CONCEPTUAL DOMAIN (B) following (Lakoff & Johnson, 1980). In this study, CONCEPTUAL DOMAIN (A) was WRITING AN ACADEMIC PAPER IN ENGLISH. Therefore, CONCEPTUAL DOMAINS (B) were grouped under their respective categories emerging from the dataset. Following the literature on analyzing qualitative data, the raw dataset was carefully examined, as this stage is "an opportunity for (us) as a researcher(s) to reflect deeply on the contents and nuances of (our) data and to begin taking ownership of them" (Saldaña, 2009, p. 81). This was done in multiple rounds by the author and her thesis advisors to ensure reliability. As a first step, we counted how many valid answers we got; we checked if there were any responses comprising more than one metaphor. Two responses included two metaphors: "traveling in a hot-air balloon. The process is slow, but you acquire new and exciting experiences." and "It's a journey and a process to keep upgrading yourself. The more feedback, the more you get used to writing English articles." The word "process" in both responses was used to support their metaphors "traveling" and "a journey". Therefore, only "travelling" and "journey" were counted as valid metaphors. Some metaphors could have been listed under a different domain and it took multiple reiterations to agree on the final coding.

Then, all answers were categorized into two groups: metaphors and non-metaphors to ensure the validity of the study. A total of 42 responses were found comprising non-metaphorical

expressions even though those expressions could clearly express what the students thought their experience was like (e.g., Writing an academic paper in English is like "synthesizing theoretical and practical experience logically and critically"). Responses given by twelve students were found impossible to comprehend and therefore, not valid (e.g., Writing an academic paper in English is like "everything else"; Writing an academic paper in English is like "sorry, I could not find any word to complete the sentence"). These responses were deleted from the dataset. Eight students did not provide a response. The data analysis included one-word adjectives or short non-metaphorical phrases that effectively convey what the students feel like regarding their experience (e.g., Writing an academic paper in English is like *struggling*; like *so-so, it is neither difficult nor easy for me*).

A total of 193 responses comprising metaphors were thoroughly examined to look for all possible theoretical directions indicated by multiple readings of the data. As a next step, the dataset of metaphors was broken down into discrete parts to look for similar themes before coding them. According to (Saldaña, 2009, p. 3), a code is "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data". After identifying the keywords, the coders agreed on the ones that correspond to the main themes.

In the step of thematic organization, the codes identified in the previous step were identified and re-arranged some codes whenever necessary. Saldaña (2009) mentioned that these "advanced ways of reorganizing and reanalyzing" can allow researchers to discover "more accurate words or phrases" (p. 149). By doing so, "conceptually similar codes" can be merged and "infrequent codes can also be assessed for their utility in the overall coding scheme" (Saldaña, 2009, p. 89). Once again, we put similar things under the same themes. At this stage, certain codes which seemed to be good keywords in the first round were dropped, as they seemed redundant after the whole dataset was fully interpreted.

6.4. Findings on students' personal metaphors

To characterize participants' lived experiences through their metaphors, the 193 conceptual metaphors were grouped into ten themes that emerged: WORK, TEXT PRODUCTION, CHALLENGE, STRUGGLE, CHANGING PLACES, ACTIVITIY, NOURISMENT, EASY TASK, CONSTRUCTION, and COMPLEX PROCESS. The frequencies of metaphors in the ten conceptual domains are shown in Table 6.1. The results of each conceptual domain are presented in Tables 6.2.- 6.11. The students' metaphors are visualized in Figure 6.1.

Table 6.1 Ten conceptual categories of metaphorical perceptions of English academic writing

Conceptual domains	Frequency	%
WORK	36	18.65
TEXT PRODUCTION	25	12.95

CHALLENGE	24	12.44
STRUGGLE	21	10.88
CHANGING PLACES	20	10.36
ACTIVITY	18	9.33
NOURISHMENT	16	8.29
EASY TASK	14	7.25
CONSTRUCTION	13	6.74
COMPLEX PROCESS	6	3.11
	193	100

Figure 6.1 Visual representations of students' metaphors

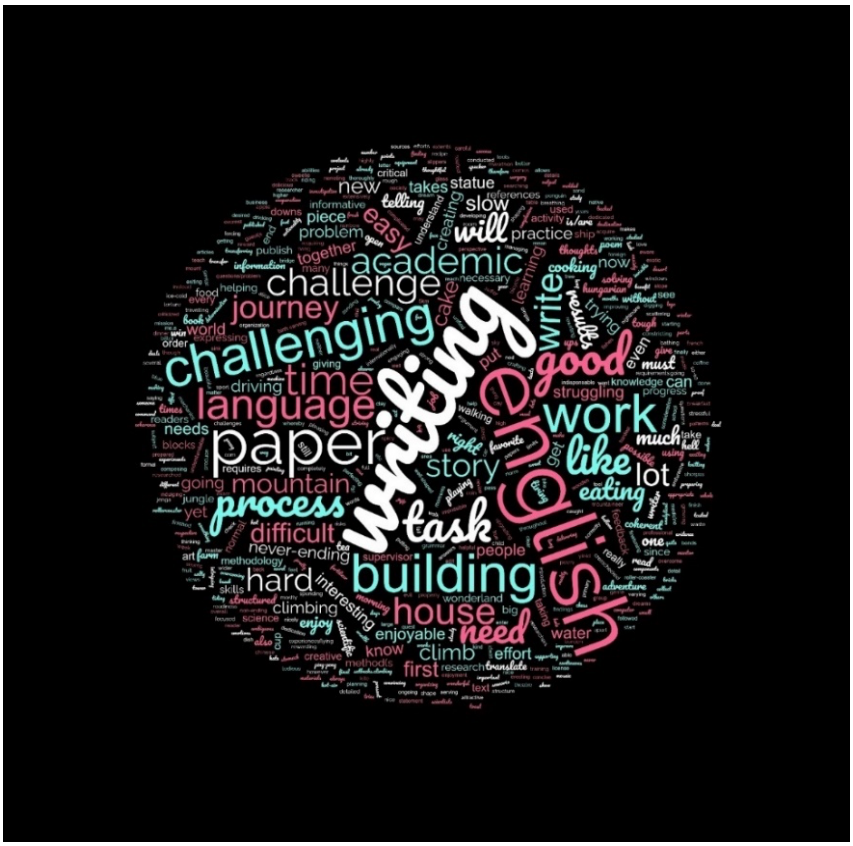


Table 6.2 Findings of the analysis of the WORK metaphor

Conceptual Domain: WORK (f:36)	Exact words of students' responses
REWARDING TASK	An interesting task
	the most important task of my day
	a good task
	Spending much efforts to reach success
	supporting all scientists in society in creating a better world, regardless of nationality.
	Doing a nice job of tiding the room
	to collect a coin with different date, and then to compare in order to see the wealth
	managing a theatre, many things need to be conducted together in order to present a good show. Hard work always has its reward.
	project
	taking a lot of much time to have good results
	expressing your scientific findings and views to your peers which could help you in developing more critical thinking.
	helpful tool and indispensable for science .it allows people to study internationally or read the scientific works right after they are published using them when they are necessary in their own researchers.
	rainbow
	Enjoyment now
	The enjoyable moments of life
	...giving a wonderful gift to myself.
	A dream comes true since my research experiments need months to be able to produce results
	Giving birth
CREATIVE WORK	carving a statue
	creating a statue; first the rough shape is molded, followed by shaping the details and finally finetuning it to its final complexion.
	creating a statue out of clay. It seems easy but needs critical skills
	Writing an academic paper in English is like indulging into a crafting activity, whereby you would use all of your

	materials and skills to yield a nicely finished output.
	an art: it is difficult to master, but once you have the hang of it, it takes only practice.
	painting an attractive and informative art.
HARD WORK	a stressful work, requiring so much of endurance, determination, and readiness to improving the text
	one week of hard work
	a very tedious work, which I do not feel prepared for
	a tough and detailed work.
	well organizing a work scenario.
	similar to creative and completely analytical work, which takes quite a lot of time
	A difficult job but still possible to do.
	hard as digging a hole
	Writing an academic paper in English is like running 5km.
	learning how to write in the primary school
	doing a hardest thing

Thirty-six students believed that academic writing in English for them is work (Table 6.2). However, their perspectives about the nature of the job to be done are different: 18 respondents interpreted it as REWARDING TASK (they used positive adjectives such as interesting, important, desired), six thought it was like CREATIVE WORK, and eleven students thought it was HARD WORK. One thing in common among these 36 students is that none of them thought that the experience was absolutely negative or impossible to accomplish. They all believed that the job was doable even when the work is "stressful," "hard," "very tedious," "tough," "difficult," or "hard as digging a hole." These metaphors indicated that writing as a task was doable.

Table 6.3 Findings of the analysis of the TEXT PRODUCTION metaphor

Conceptual Domain: TEXT PRODUCTION (f: 25)	**Exact words of the students' response**
WRITING IN L1 IS WRITING IN L2	writing in my language now
	writing it in Chinese.
	writing in your own language because you need to understand what you want to mean when you write

	writing a paper in my own language
IDEA TRANSFER	Transferring our knowledge into a paper
	Transfer your ideas to the world in one unified language dedicated to science.
	Putting down in words your work and results for others to see and benefit from
	translate my thoughts to paper, making it clearer for the reader.
	Writing an academic paper in English is like expressing your dreams and thoughts into reality.
	An information which is clear, concise, focused, structured and backed up by evidence, to make it understandable to a wider group of people
	Being coherent throughout the paper. It's more about the structured argument than delivering a vague statement
	convincing the people who already know what you are saying, but act as if they do not understand
WRITING IS WRITING	
WRITING A BOOK	Writing a book
	Writing a book, it has been engaging but at the same time informative
WRITING A FORMAL LETTER	writing a formal letter
WRITING/TELLING A STORY	writing an interesting story, fun and challenging
	writing a story is like narrating a story to a child. It must have the answers to all their questions.
	Telling a story
	telling a story, it needs introduction with ambiguous questions/problem and methodology then how the method(s) is/are helping for solving the problem.
	problem and methodology then how the method(s) is/are helping for solving the problem.
	telling a story.
	write a novel

WRITING A POEM	writing a poem; you need to be very thoughtful yet intriguing composing poetry. writing a poem

Students were asked to provide a metaphor to describe their academic experience while they are earning course credits, struggling to get their papers published and writing up their dissertation. Table 6.3. comprises 25 metaphors in the conceptual domain of TEXT PRODUCTION. Interestingly, four students, whose mother tongues are Spanish, Chinese, Arabic and Azerbaijani, respectively, found that WRITING IN L2 IS LIKE WRITING IN L1. For these students it is logical to infer that L2 writing is not different from writing in L1 due to their practice in both languages. Most probably they mean that the process and challenges in academic writing in L1 and L2 are technically similar as well as equally demanding. It is not English that makes it hard to write publications and a dissertation, but the genre of academic writing, irrespective of the language they use.

Eight students (Table 6.3.) thought that it is like IDEA TRANSFER onto paper in a required presentable format; it is obvious that they were reflecting on their writing experiences as a means of conveying content. One respondent explained the reason why it was like idea transfer: “your work and the result for others to benefit from.”

Thirteen students (Table 6.3.) mentioned that WRITING IS WRITING reflecting that the nature of writing is unique itself and difficult to find another equivalent, even though they used different genres of writing in their metaphors. From the metaphors WRITING A BOOK/A FORMAL LETTER, it was inferred that the characteristics of academic writing are similar to formal requirements related to writing a book or a formal letter, as opposed to writing stories and personal letters. Seven students thought that features of a story and novel are like those of English academic writing, as they are all texts following a prescribed structure, and certain characteristics must be included in them. Therefore, it is relatable that writing an academic text is like story telling. As a student put it, a dissertation must include all the questions raised. Three students mentioned that EAW is like composing poems, yet another genre characterized by special rules, as the writer must be “very thoughtful yet intriguing.”

In sum, it is noticeable that the students whose metaphors belong to this conceptual domain thought about the nature of their English academic writing as they filled in the metaphorical prompt. As writing up the dissertation to be submitted on time is one of the main doctoral tasks, it is natural that they all thought about it when they expressed what their writing experience is like.

Table 6.4 Findings of the analysis of the CHALLENGE metaphor

Conceptual Domain: CHALLENGE (f:24)	**Exact words of students' responses**
	challenging activity

	it is very challenges, because we should read a lot of references to improve our information Challenging Pretty challenging, but very creative and exiting for me as a young researcher A challenging task yet it is enjoyable to finish. really difficult task that requires a good command of the English language because of not being a native English speaker, this task is more challenging even though I have studied English and I teach it for several years. challenge. I am not so good in English, therefore I mostly write and publish in Hungarian. In case of English papers, I write it in Hungarian and translate in English them. I would take too much effort to write them in English properly. A challenging task. possible and challenging A challenge with ups and downs a big challenge to someone starting his first year in English a real challenge for me a challenge which will be criticized no matter how good it is writing an academic paper in English is like a hard challenge for me. Since I am not only struggling on my academic subject but also with the grammar. It is still challenging for me. Overcoming a challenge challenging (4 times) forcing your foreign language knowledge to its limits. driving a car after getting your first license

As seen in Table 6.4., 24 students thought that it was a challenge to write an academic paper in English. It is quite understandable that writing scholarly texts at the doctoral level is tough for students who came from non-English speaking backgrounds, which is best understood in the metaphor "forcing your foreign language knowledge to its limits." As is shown in Table 6.4., 22 students used the exact word "challenge," and only two respondents expressed the idea in other words: the above response mentioning their limits and the last metaphor evoking the first time they drove a car, clearly describe the cognitively challenging situation students find themselves in.

Table 6.5 Findings of the analysis of the STRUGGLE metaphor

Conceptual Domain:	**The exact words of students' response**

STRUGGLE (f: 21)	
TORTURE	A torture A nightmare. A hell Hell :((
IMPOSSIBLE MISSION	Searching a penguin in the desert. playing ping-pong against an invisible building a Jenga tower under a wooden bridge using fishes that can only be caught in fresh water from 6 am to 7 pm in fall. Mission impossible
SUFFERING	bathing in ice-cold water during winter Walking on a hot beach sand without slippers Struggling Struggling trying to not sink with the ship Riding a bike on a steep slope which is really tiring
BURDEN	a burden for me. I do not like it even tough, i am good at it.
ANXIETY	having a nod in my stomach, but not because of English but overall anxiety about sending it to my supervisor and trying to publish it
NECESSARY EVIL	a necessary evil we must overcome A small surgery the effect of fertilizer on sweet corn eating bitter medicine

Twenty-one students (Table 6.5.) described their experience in overwhelmingly negative terms as unpleasant: a STRUGGLE. It was obvious that they had to struggle to produce scholarly texts at the expected level; however, they also understood that it was a necessary evil they had to overcome. The metaphors they used ranged between extreme negative images of torture, the Biblical hell, evil, and struggle, to a humorous metaphor softening the edge of the struggle: "Searching (for) a penguin in the desert." Anxiety is present not only in the metaphors related to the above examples, but also in the unusual image of the "effect of fertilizer on sweet corn", merging climate anxiety with writing anxiety.

Table 6.6 Findings of the analysis of the CHANGING PLACES metaphor

Conceptual domain: CHANGING PLACES (f :20)	**Exact words of the students' responses**
JOURNEY	It's a journey and a process to keep upgrading yourself. The more feedback, the more you get used to writing English articles.

	Writing an academic paper in English is like a never-ending journey. A journey A long journey going on a business trip to an exotic place. You must work hard and put in a lot of effort but it's enjoyable at the same time. Alice in Wonderland but instead of Wonderland you enter a world of never-ending references and paper requirements. Going out in nature as I will enjoy the journey but should be aware of the risks that may face me. A journey to a jungle Walking in the jungle finding the right track to the desired destination.
UPWARDS MOVEMENT	travelling in a hot-air balloon. The process is slow, but you acquire new and exciting experiences flying a kite in an open blue sky climbing a tree, the higher you get the more perspective you have on your research area on respective climbing a mountain. It is tiring but in the end, it is highly rewarding. On the way up, there will be parts that you'll enjoy and there will be points where you are about to give up. climbing a mountain: even with the right equipment and training, it is slow in progress and full of setbacks. climbing Mount Everest without sherpas. a mountain to climb. a mountain climb a mountaineer who tries to climb for days climb a high mountain

Table 6.6 presents 20 metaphors of two types comprising the conceptual domain of CHANGING PLACES. Ten students wrote that writing an academic paper in English was like moving from one place to another, towards a clear goal from their current point. Their metaphors were not the same, however. Even though the adjectives they used to modify meaning were different (e.g., “never-ending,” “long,” “of the risks,” “enjoyable”), they all implied that their journey took time and they had to work hard. The other ten students’ metaphors included not only moving forward but also moving upwards, like in an uphill struggle. They interpreted their experience as a process of going upward which enables them to enjoy a bird’s eye view, even though it might be tiring, without Sherpas, and full of

setbacks. The adjectives they used (new, highly rewarding, exciting) indicated that they also appreciated the beautiful side of their experience, clearly indicating mastery motives.

Table 6.7 Findings of the analysis of the ACTIVITY metaphor

Conceptual Domain: ACITVITY (f:18)	**Exact words of students' responses**
CONSTANT UPS AND DOWNS	A roller-coaster of emotions. At the end, you either hate it or love it. Rollercoaster
ADVENTUROUS ACTIVITY	an adventure an Adventure
RULE-BASED ACTIVITY	knitting patterns a game Playing chess, which easy to start but hard to win. professional sport, takes a lot of dedication and practice, however from time to time you also need a bit of luck. Marathon. Slow and steady win the race Driving driving a bicycle
GOAL-ORIENTED ACTIVITY	taking an exam an investigation pass complicated but interesting quest Writing an academic paper in English is like learning new skill. We need to practice on it then we will get used of it. learning how to walk for the first time. going to the farm with the appropriate farm tools Fruit growing

In Table 6.7, all metaphors are related to an activity: two out of 21 students described their experience as a roller-coaster ride emphasizing that it is full of ups and downs, making them thrilled, excited, and scared reflecting mixed emotions. Another two students thought that

EAW was adventurous, indicating that they were aware of both sides of an adventure: the opportunities to discover new things and the risks one might face if not well prepared.

Seven students' metaphors referred to rule-based activities, highlighting the fact that they understand that they must follow strict rules if they want to be able to actively participate in those activities. Some of these rule-governed activities in the metaphors were simplistic (e.g., knitting), whereas others were highly complex and cognitively (chess) or physically (marathon) extremely demanding.

Seven out of 21 students' metaphors concerned an exam, an investigation, a quest, and developing a new skill; all of these activities have a clear goal. In addition, they all include a prescribed sequence of steps, which may be known or unknown at the beginning of the activity. The activities chosen by the students (riding a bicycle, driving a car, playing a sport, taking an exam, performing investigation, and following on a quest) imply that they realized that academic writing requires practice and training. In most of these responses, although the respondents used different metaphors to describe their experience, they had one thing in common: they were quite positive in terms of describing their academic writing experience. These metaphors implied that all activities required concentration (even the roller-coaster) and efforts to make progress in academic writing.

Table 6.8 Findings of the analysis of the NOURISHMENT metaphor

Conceptual Domain: NOURISHMENT (f: 16)	**Exact words of the students' response**
	eating a piece of cake Eating my dinner eating a French toast in the morning. Having my breakfast every morning. Apple something not sweetie not salty but between Eating spicy food, it is delicious but it makes you suffer a cup of tea for me. going out for coffee Cup of tea drinking a glass of water. cooking a kind of food that you have never tasted before Cooking your favorite dish, where you know that the time and effort will not go for waste. cooking because the writer needs to check all the language components and the contents, text organization, coherence, mechanics, texts' readers,

	etc. Then, the writer has to edit, revise, and have proof readers to give any feedback.
	preparing our favorite cake recipe. serving a good meal on table that the guest(s) can enjoy!

Sixteen students' metaphors in Table 6.8 indicated that their academic writing experience was like getting some sort of nourishment, eating, and drinking something that nourishes their body. Three students added adjectives to describe the taste of food as "spicy," "not sweetie not salty but between"; however, all these students seemed to understand that spicy and unusual combinations of flavors can be enjoyable, delicious, and interesting. In all, five out of the 16 metaphors implied that academic writing was like preparing food to serve something delicious at the end of a series of preparations. The metaphors offered by these 16 students indicated that their academic writing experience was not a waste of time for them, as it would result in something nourishing and delicious for whoever their target audience will be.

Table 6.9 Findings of the analysis of the EASY TASK metaphor

Conceptual Domain: EASY TASK (f:14)	**Exact words of students' response**
	A piece of cake (3 times)
	A piece of cake if you have good results and ongoing progress. That can be done with the continuous cooperation with your supervisor
	Normal
	a normal task because I only know to write a paper in English and not in any other language but striving too as it deals with a lot of correctly researched fact those are crosschecked extensively.
	Norm
	For now it is not that difficult
	Easy
	no big deal
	so-so. It's neither difficult nor easy for me.
	Easy if you have a mentor
	doing a simple task for me
	breathing

Table 6.9. shows that 14 students' metaphors conceptualized academic writing in English as something that was not very demanding but as an easy task. Five respondents used the metaphor of a piece of cake, while others said it was a normal or enjoyable task. One

respondent used the word “breathing” as a metaphor to highlight that EAW was just a normal part of human life.

Table 6.10 Findings of the analysis of the CONSTRUCTION metaphor

Conceptual Domain: CONSTRUCTION (f:13)	**Exact words of students' responses**
BUILD FOLLOWING PLAN	trying to put a mosaic together: One is working with a large number of sources that are related to varying extents, yet they need to be made into a coherent and pleasing whole.
	building a LEGO house
	erecting building blocks.
	building a structure, requires planning, well-shaped blocks, and strong bonds.
	Take a machine apart and put it back together.
	building a house where I work on every detail thoroughly with careful consideration.
	constricting a beautiful house.
	building a house
	Building a new house from scattering bricks
	building a new house
	Building a house.
	building a ship

Table 6.10. comprises 13 students’ metaphors comparing their experiences to building or constructing something by following a clear blueprint. Seven of them clearly stated the desirable result of their building process: a house to live in (six students) and a ship to sail across the ocean (one student).

Table 6.11 Findings of the analysis of the COMPLEX PROCESS metaphor

Conceptual Domain: COMPLEX PROCESS (f:6)	**Exact words of students' responses**
	a never-ending process
	It is a process with its ups and downs.
	a non-ending process of rewriting
	process.
	a very slow process with many
	windows open on the computer….

	the process of perfecting own abilities.

As shown in Table 6.11, six students conceptualized the construct of EAW as a process; two responses used positive adjectives *(with its ups*, *leading to perfection*). These students recognized key characteristics of writing an academic paper in English: tedious and slow. It is also noticeable that students did not think of it as a completely negative experience, even though one of them used *never ending*. They applied words that describe the lengthy nature of creating academic texts. The noun phrase "a very slow process with many windows open on the computer" visualized the lived experience of what using a word processor means in the life of a doctoral student.

As the data in the tables indicate, it is thought-provoking to explore students' perceptions of their EAW experience closely: they reveal their beliefs about their own and other stakeholders' role and identity. For example, one of the students mentioned that writing was "*like narrating a story to child. It must have the answers to all their questions"*, whereas another one said that it is like "*convincing the people who already know what you are saying but act as if they do not understand"* to explain the same process of EAW (Table 6.3). Their perceptions about their own roles and those of their audience (committee members of their dissertation) were different: in the first example, the audience is like a child knowing nothing, so they must explain everything in detail; in the other one, the student believed that the audience already knew everything.

6.5. Discussion

The sample size (255 respondents) was much larger than in any previous inquiries eliciting metaphors on EAW. In previous publications the number of participants ranged between fewer than ten: four in Pavesi (2020), seven in Armstrong (2007) and Wan (2014). However, there were 140 participants in Hart (2009). More specifically, the two publications involving graduate students analyzed data collected from four (Pavesi, 2020) and 100 respondents (Aydin & Baysan, 2018).

The participants in the current study wrote a variety of metaphors conveying different shades of interpretation regarding their academic writing experiences in English in ten conceptual domains: WORK, TEXT PRODUCTION, CHALLENGE, STRUGGLE, CHANGING PLACES, ACTIVITIY, NOURISMENT, EASY TASK, CONSTRUCTION, and COMPLEX PROCESS. Overall, not all the exact metaphorical expressions mentioned in previous studies were found in the present inquiry; however, all the metaphorical conceptual domains that emerged in this study were also mentioned in previous analyses in other contexts (Armstrong, 2007; Aydin & Baysan, 2018; Hamouda, 2018; Hart, 2009; Paulson & Armstrong, 2011; Pavesi, 2020; Wan, 2014). This outcome offers evidence that the study is valid, as the findings are in line with previous research conducted with undergraduate and graduate participants. Additionally, the results in the current study reflect the special difficulties students face in academic contexts where English is a lingua franca in the literature (Ankawi, 2015; Badenhorst et al., 2015; Hanauer et al., 2019; Huang, 2010; Jafari, Ja, et al., 2018;

Kotamjani et al., 2018; Lei & Hu, 2019; Li & Vandermensbrugghe, 2011; Lin & Morrison, 2021; Ma, 2021; Ramírez-Castañeda, 2020).

Certain metaphors in this study were unique and not found in other publications. For example, the idiosyncratic metaphor *building a Jenga tower under a wooden bridge using fishes that can only be caught in fresh water from 6 am to 7 pm in fall* was not only humorous but also creative, reflecting the highly constrained characteristics of academic writing. There are other unique metaphors in the current dataset, for example, the ones related to *searching for a penguin in the desert* and *bathing in ice-cold water in winter*.

Only one out of 255 students used *rainbow* as a metaphor in the study. It is widely accepted that a *rainbow* is a wonderful natural phenomenon, and it represents a virtuous quality. Interestingly, the metaphor of *rainbow* was used to represent writing experiences in other studies (e.g., Aydin & Baysan, 2018; Hamouda, 2018). Similarly, in our dataset, one respondent wrote *knitting*, and it was also mentioned in Hamouda's (2018) study. Several students in the current study wrote metaphors related to cooking, consuming and preparing food, and drinks to represent their EAW experience. One student used a particular taste as a metaphor: *something not sweetie not salty but between*. Flavors were also among the metaphors to explain what EAW is like in other studies (Aydin & Baysan, 2018; Hamouda, 2018).

All participants in this study shared certain characteristics of the educational context, as they all pursued their research degrees in the doctoral education system of Hungary; however, we found no specific reference to the local context.

All participants were non-native users of English, which may explain why twelve responses were unclear and 42 answers were not categorized as metaphors. All respondents could be assumed to have gone through the same admission protocols and procedures of fulfilling their doctoral tasks to meet requirements of earning course credits, publication credits, and research credits in their respective PhD programs. The metaphor dataset showed that the ways participants made sense of what they had experienced varied. Even when their personal metaphors are grouped under a large conceptual domain along with those of others', the underlying factor for their choice of metaphor is unique. For example, the metaphor *serving a good meal on the table that the guest(s) can enjoy!* is close in meaning to the metaphor *preparing food*; however, it was clear that the students expected their work to be valuable enough to benefit the readers (the guests). This indicates that their intension is to make a valuable contribution to their academic community. Similarly, a student mentioned that their academic writing in English is like *a burden*, which may imply that their abilities in EAW are limited; however, the reason why the respondent chose this metaphor (*a burden*) was not the limitations in their EAW abilities ("*I do not like it even though, I am good at it.").* This could be interpreted as the student's facilitating anxiety led to better performance. Overall, the metaphor analysis showed that students were confident about their abilities, although not all enjoyed the process, or were pleased with their experiences.

An additional remarkable finding is that only four students gave metaphors with extreme negative connotations (e.g., torture, nightmare, hell). Although the exact metaphor of *hell* was not found in any of the seven reviewed studies, *nightmare* had a similar connotation in (Aydin & Baysan, 2018; Hamouda, 2018) and *torture* was found in (Hamouda, 2018). Other metaphors also convey negative meaning, and they concerned the EAW experience throughout the PhD program. For example, the metaphor "*trying to not sink with the ship*" offers a vivid picture of what it is like to struggle for survival as a non-native English-speaking student in a publish or perish situation (similarly to the complex challenge reported in the Jenga tower metaphor). The metaphors analyzed in this study offer new aspect of knowledge on students' cognition, emotions, and other aspects of their lived experiences as doctoral students writing academic texts in English.

6.6. Conclusions

The students' conceptual metaphors reflect similar results presented in the literature. Hyland's emphasis on a targeted academic audience and the discipline-specific nature of academic writing finds echoes in the metaphors, revealing the interplay between individual experiences and the broader academic community. The metaphorical representation of doctoral students aspiring to serve a "good meal on the table" for their academic guests aligns with Hyland's assertions about the dialogic nature of scholarly communication. The participants' demonstrated awareness of genre, as evidenced in the metaphors within TEXT PRODUCTION and CHALLENGE domains, underscores Johns' argument that genre awareness is pivotal in academic writing (Johns, 2011; Johns & Swales, 2002).

The recurrent metaphors related to STRUGGLE, CHANGING PLACES, and COMPLEX PROCESS align with scholars' concept of academic discourse communities (Flowerdew, 2012; Friedman, 2021; Hyland, 2009; Hyland & Jiang, 2019). These metaphors vividly depict the challenges faced by newcomers in adapting to the discourse practices of their academic communities, in accordance with findings of the selected studies presented in Chapter 2 and the findings of the exploratory study in Chapter 4. Duff's (2010) emphasis on language as a tool for identity construction is reflected in the metaphors related to NOURISHMENT, EASY TASK, and CONSTRUCTION. The ways in which students conceptualize their writing experiences suggest a deliberate effort to construct a scholarly identity through language socialization, mirroring Duff's insights into the role of language in academic identity formation (Duff, 2010b, 2019; Duff & Anderson, 2015; Duff & Doherty, 2014).

Moreover, apart from four examples conveying negative connotations, the diverse range of metaphors captures the complexity of students' perceptions, oscillating between positive, creative, humorous images and more demanding facets of the EAW process. The identified conceptual domains and metaphors are consistent with findings from prior inquiries conducted in various educational contexts (Armstrong, 2007; Aydin & Baysan, 2018; Hamouda, 2018; Hart, 2009; Paulson & Armstrong, 2011; Pavesi, 2020; Wan, 2014). While there is alignment with previous studies, this study found unique metaphors, offering vivid insights into the emic perspectives of students' lived experiences with EAW.

In conclusion, the students' conceptual metaphors acknowledged the demanding nature of EAW for NNES novice writers, but at the same time they also reflect an overall optimistic perception. This positivity is congruent with the quantitative survey results presented in Chapter 5: students felt a sense of progress and increasing mastery in their EAW abilities over the years of their PhD studies. Overall, these results affirm the claim that metaphors serve as effective tools to explain unfamiliar and abstract concepts and ideas in educational phenomena when employed as research instruments in educational contexts (Sykes, 2011).

CHAPTER 7. EXPLORING NNES DOCTORAL STUDENTS' SUPPORT NEEDS IN ENGLISH ACADEMIC WRITING: A QUALITATIVE ANALYSIS

Chapter 7 presents yet another qualitative study: it investigates what kind of support NNES doctoral students find necessary for enhancing their EAW abilities. The chapter comprises five sections: after the introduction, the second section presents the research question, the participants, the instrument, and the data analysis procedure. The subsequent sections share the findings and the discussion of the outcomes, whereas the last part concludes the needs analysis.

7.1. Introduction

This cross-sectional qualitative study explores the emic perspectives of NNES doctoral students who participated in the survey presented in Chapter 5. It examines what kind of support participants perceive as valuable in accomplishing their desired objectives in English academic writing. To gain an in-depth understanding of their support needs, an open-ended question was integrated into the survey to gather specific insights highlighting participants' support preferences. The exploratory study in Chapter 4 found that the students were keen to improve their EAW skills. The large-scale quantitative study presented in Chapter 5 revealed that EAW is a complex construct, and its development involves a dynamic process, as it is significantly correlated with several factors, including the quality of feedback students received, their knowledge of research areas and research methods, ability to manage emotions and maintain motivation. Therefore, this study investigated what kind of support the students thought they need in order to improve their EAW. An earlier version of this chapter was published (see Phyo et al., 2024).

7.2. Method

7.3. Research question

What kind of support do NNES doctoral students think could help them the most to achieve their aims in English academic writing?

7.3.1. Participants

The same 255 participants were involved in the study. Detailed information about them was provided in section 5.4 in Chapter 5.

7.3.2. Instrument

To explore the specific kind of support that NNES doctoral students believed would be most conducive to achieving their desired goals in improving their English academic writing abilities, the survey included an open-ended question. It was the last question of the survey and it asked participants, "What kind of support do you think could help you the most to achieve your desired target in English academic writing abilities?" The question aimed to capture participants' personal insights and emic perspectives on the support they perceived as

essential for enhancing their proficiency in EAW. The question was reviewed by two experts and one researcher and they confirmed its suitability for fulfilling the study' aim (Babbie, 2020; DeVellis & Thorpe, 2021; Polit & Beck, 2006).

7.3.3. Data analysis

As a first step in the data analysis process, the number of valid responses for analysis was counted, while excluding any responses that were deemed invalid (such as no response or off-topic response). Four students chose to leave the item blank, and one respondent provided "NA" (not applicable) as their answer. Additionally, seven students filled in the blank with words that did not answer the question appropriately (e.g., "I don't know," "Good," "No idea," "Not clear," "Nothing," "non," "none"). To maintain the relevance and scope of the current research, the topic of "public speaking" was also excluded, despite its importance for all doctoral students in developing their academic English skills. Furthermore, two responses were considered too general to be valid; they included statements about setting supportive learning outcomes at the entry date and the study environment. A few longer responses were also excluded as they were irrelevant to the focus of the item (e.g., "The sense of achievement after publication is a kind of self-affirmation and encouragement. Not only can I get a doctorate, but I can also apply it in real life. It can also be used to teach English skills at university"). As a result, a total of 17 responses were excluded, leaving 239 students' answers that were considered valid for the analysis.

Despite asking for specific types of support that would help improve their English academic writing performance, the responses were diverse in both content and form. Respondents used adjectives, phrases, or short sentences to express their needs, including examples such as "Free Scientific Research Writing Courses," "An academic English class would be nice," "To have a course related to writing a doctoral dissertation," and "One-week course about academic writing." In the briefest responses, seventeen students provided only a single word, such as "time," "vocabulary," "feedback," "books," "workshop," and "money."

A thorough examination of the students' responses was conducted in multiple rounds, to reflect both "on the contents and nuances" of the dataset, following the literature on analyzing qualitative data (Saldaña, 2009, p. 81). In the subsequent step, the dataset was carefully deconstructed into distinct points, and keywords were identified. Once the keywords were agreed upon, the coding process commenced with the collaboration of the author and her thesis advisors. A code is "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldaña, 2009, p. 3). A meticulous analysis of 266 coded items was conducted to explore every conceivable theoretical aspect indicated through multiple readings of the data, following Saldaña's (2009) guidelines.

The analysis of the dataset led to the identification of eight main themes and the coded items were grouped accordingly under these themes (Table 7.1). The process of thematic organization involved multiple rounds, as suggested by Saldaña (2009, p. 149), requiring the "reorganization and reanalysis" of the grouping whenever the overall coding scheme was

reviewed. It is important to note that the students' answers were analyzed in their authentic form without any language or content editing. The authentic texts are presented in italics to preserve their originality. The students' responses were visualized in Figure 7.1.

Table 7.1 Emerging themes in the dataset of 266 items

	Themes	Frequency	%
1	Need formal instruction	89	33.46
	1.1. Training sessions		
	1.2. Upgrading English proficiency		
	1.3. Vocabulary		
	1.4. Grammar		
	1.5. Citation		
	1.6. Critical thinking workshops		
2	Feedback	101	37.79
	2.1. Feedback not specified		
	2.2. Quality specified		
	2.3. Feedback from advisors/professors/instructors/experts/mentor		
	2.4. Feedback from peers		
	2.5. Feedback from proofreaders		
	2.6. Feedback from software		
	2.7. Feedback from native speakers		
3	One's own responsibility	47	17.67
	3.1. Practice		
	3.2. Reading		
	3.3. Maintaining motivation		
	3.4. Working hard		
4	No extra help needed	10	3.76
	4.1. Current EAW abilities are sufficient		
	4.2. Current support is sufficient		
5	Research literacy	8	3.01
6	Time	6	2.26
7	Access to resources	3	1.13
8	Finance	2	0.75
	Total	266	100

Figure 7.1 Visualization of students' responses

7.4. Findings

In this section, the emerging themes in the dataset are presented in Table 7.1, whereas the detailed analyses and discussions of each theme are in sections 7.4.1 to 7.4.7.

7.4.1. The theme "Need formal instruction"

In this section, a detailed account of the analysis of the theme related to the formal instruction needs specified by students is given. This main theme was categorized into six sub-themes: Training sessions; Upgrading English proficiency; Mentorship; Vocabulary; Grammar; and Citation (see Table 7.1). The findings for these six sub-themes are presented from 7.4.1.1 to 7.4.1.3.

7.4.1.1. Training sessions

Seventy-two responses indicated the need for special training in academic writing which were further grouped into six emerging sub-themes (Table 7.1). Examples of students' responses include, for example: *Free Scientific Research Writing Courses*; *a special practical course for academic writing*; *An academic English class would be nice*; *Training program on how to conduct academic writing*; *Having courses in English academic writing; Writing courses at the uni specialized for PhD and given by professionals; I think I need to take a course that focuses on improving my academic writing*; *To have a course related with writing a doctoral dissertation.; one week course about academic writing*.

Among the 72 responses expressing the need of EAW training sessions, four students stated that the academic writing course should be compulsory (*Mandatory courses in writing English*; *Compulsory courses for doctoral students for all of Faculty, not only for the Faculty of Education, the Faculty of Social Sciences*; *add English Academic writing course in all*

program curricula as an obligatory course). Although other respondents did not mention whether EAW instruction should be compulsory or not, all these 72 responses indicating the need to get explicit EAW training sessions is something stakeholders of PhD programs should take into consideration when designing their curriculum. In certain doctoral programs which integrate coursework, students sometimes have to take courses which are not directly related to their research field in order to meet the coursework credit requirement (Moreno, 2014). In this kind of situation, offering EAW courses as a credit course would be helpful for all students regardless of their specific field they work in (Aitchison et al., 2012; Kamler & Thomson, 2008).

The analysis showed that that five out of 72 responses expressed the need of formal instruction focused on writing publications: for example, *support such as the tutorial how to write journal manuscript*; *Tips and tricks of how to write an interesting sentences from the editor's and reviewer's perspectives instead of basic academic writing* ; *I think an academic course for Academic writing and publications would help*; *More practical workshops about writing for publication and more practices; I think some courses will be useful for all the Ph.D. students or the scientist in general such as scientific writing and publication course*. These answers indicate that students felt the need to know more about what and how they had to write when accomplishing their main tasks in English: writing manuscripts for publication and their dissertation.

Previous studies have pointed out that NNES doctoral students do not typically have access to formal training in scholarly writing (e.g., Cotterall, 2011; Hanauer et al., 2019; Lee & Murray, 2015; Odena & Burgess, 2017). In the dataset, a student directly addressed this issue as follows:

> *A specialized course in scientific writing would definitely help. I've never had an opportunity to learn this in any language at an official capacity, all my current knowledge is based on personal experience and my knowledge in English, most of which I acquired before starting university at all*. (P37)

Even a student who claimed to have native-like proficiency in English admitted that there was room for improving their writing skill for academic research papers:

> *Even though there's no limit to one's own improvement, especially regarding language and communication skills, I feel confident with my current progress. Being a second language speaker in English, I have the proficiency of a near native speaker. But my academic writing still can use help in regard to be formulating the argument and retaining a coherent balance of the argument throughout the paper. I will also need to familiarize myself more with different stylesheets to keep the integrity of the article intact.* (P121)

7.4.1.2. Upgrading English proficiency

Although the question focused on academic writing support, ten responses mentioned the need to improve their English proficiency in general (e.g., *English course in the advanced level; Mandatory language classes; English lessons*). This finding indicated that some NNES students tended to feel that their English proficiency was inadequate to allow them to write scholarly texts well. This outcome is in line with other studies which have found that a low level of English proficiency hinders students' active participation in scholarly activities (Huang, 2010; Ramírez-Castañeda, 2020).

7.4.1.3. Special instruction on vocabulary, grammar, citation, and critical thinking

Vocabulary is the most fundamental area in developing EAW skills (Ankawi, 2015; Hanauer et al., 2019; Jeyaraj, 2020; Odena & Burgess, 2017), but only two students expressed their needs to widen their academic lexical scope; one of them was specific about what they need: *research targeted terms, phrases and special words*. However, as only two respondents referred to vocabulary, most probably others assumed that they were responsible for developing their specific vocabulary.

A good command of grammar is a must for doctoral students in all kinds of academic writing. According to Ramírez-Castañeda (2020), grammar is one of the most frequently mentioned reasons why reviewers reject manuscripts. In our dataset, two students mentioned their need to improve their accuracy in grammar, whereas the other respondents did not emphasize grammar as a domain in which they needed help.

In order to meet the ethical standards of scholarship, it is essential to cite all the sources from which ideas and theories are taken. Therefore, doctoral students need to know how to cite academic sources in line with the preferred citation styles of respective doctoral institutions and refereed journals. Two students in the dataset stated that they would like to improve their knowledge in this area; their responses were worded as: *scientific reference/citation tools; APA or MLA.* Although consistent use of style sheets is essential in academic writing, this specific area was not a high priority where most respondents needed help.

Writing a doctoral dissertation requires a high level of critical reasoning, as its findings are expected to be based on the student's critical approach to finding a gap in previous research, and also to benefit its target audience, who are experts in the field (Badenhorst et al., 2015; Cennetkusu, 2017; Kotamjani et al., 2018; Odena & Burgess, 2017). Only one student indicated the need to focus on critical thinking skills (*critical thinking workshops*).

7.4.2. The theme "Feedback"

7.4.2.1. Feedback not specified

Nine students mentioned that they wanted feedback; however, they did not specify what kind of feedback they wanted or who they expected to provide them with it (for example, *Feedback on my writing will help me a lot*).

7.4.2.2. Quality of feedback specified

In our analysis, the need to receive feedback was found in 38 out of 266 coded responses. Respondents used adjectives (e.g., *quick, detailed, immediate, specific, constructive, and formative, instant, regular, weekly, more precise and thoughtful*, etc.) or modifying phrases (e.g., *both written and spoken, both language and content, based on the pure evaluation; More detailed feedback about how well structured my materials are*) to describe the type of feedback they would like to get. Even though the adjectives students used were different, one thing is common in their texts: they all want fast and useful feedback to improve their work.

Another finding concerns their wish to know both their strengths and weaknesses so that they can move forward efficiently (e.g., *Receiving feedback to the strengths and weaknesses of my writing in timely manner*; *If I knew what my weaknesses are, I would be able to work on them on my own, thereby eliminating them*). The main purpose of giving feedback is to help feedback-receivers improve their academic performance over time. When feedback fails to meet its purpose and lacks this most important quality of being helpful for students, it may become a psychological burden students have to bear and may cause anxiety and frustration. A detailed account of a student shows how miserable they felt when they found the feedback unhelpful and discouraging. The excerpt below offers insights into this respondent's emic perspective: what it feels like to get feedback from their thesis advisor over the years:

> *Positive feedback, not only negative comments like "oh no" or only a question mark as a comment to certain parts of my writing. Or mysterious comments which I suppose are there to lead me to the correct answer. It would have been great to receive some strategic knowledge about how to write. The way to write an article or abstract was for me: discussion about content then do the task, send it to the supervisor, the supervisor tears it apart with no positive feedback or encouragement, then send the corrected versions about 4-5 times. In the last versions the supervisor would correct his/her own sentences. At the end, I felt like it wasn't my work at all and yet I worked on it a lot. I think if I had more strategic and exact instruction on how to write and got some positive feedback or encouragement in time, I would have been way more successful.* (P56)

7.4.2.3. Feedback from advisors, professors, instructors, experts, or mentors

Thesis advisors tend to be the key source of feedback as students write their doctoral dissertations; however, many respondents' answers (35 out of 266 responses) highlighted the fact that they were aware of their need to get helpful feedback also from other experts in their field. They used multiple terms for potential reviewers and faculty members offering feedback: for example, *course instructors, professionals, tutors, professors, reviewers, experts, the scientists in my field, members of the doctoral school, an outside observer, teachers*. As for who should provide feedback, they specified both internal and external members of the scientific community: *Constructive feedback from the reviewers for publications and from the supervisor for my dissertation writing*; *More feedback from*

"every" professor that teaches the subjects in the doctoral school. It's because not every professor gave proper feedback.

Two students mentioned their need for feedback from their *mentor*. Previous research (e.g., Mazerolle et al., 2015; McDaniel et al., 2022; Vauterin & Virkki-Hatakka, 2021; Young et al., 2019) found that tailored feedback, advice, comments, and suggestions that resulted from one-on-one communication patterns of scholarly engagement between a mentor and their mentee goes a long way in preparing PhD students to become professional scholars. Having an experienced researcher who has already taken the same road helps students along at all steps of the PhD ladder (Anderson et al., 2019; Barrett et al., 2017; Brill et al., 2014).

7.4.2.4. Feedback from peers

Nine students in our study were aware of the fact that they could grow together academically by helping one another and that they also would like to receive feedback from their peers. For example, *quick feedback from advisor and peer: Constructive feedback from peers and supervisors; more peer support; having a monthly meeting with my peers to share and talk about our projects and the progress; Teamwork among international students*. These responses indicated that students expected peer feedback to be helpful and conducive to their development. Other studies have also found that doctoral students can contribute to one another's projects by using their unique expertise and experience they gained in different research contexts (Aitchison & Lee, 2010; Flores-Scott & Nerad, 2012; Mason & Hickman, 2019; Trippas & Maxwell, 2021).

7.4.2.5. Feedback from proofreaders

The analysis revealed that 25 students expressed their need to get their manuscripts proofread before submission to journals. To get the articles published in high-quality refereed journals, their manuscripts must demonstrate that they meet the journals' quality criteria. Proofreading the manuscripts before submission is often included in the article submission guidelines of refereed journals. Several journals explicitly state that submitted manuscripts must be already at the ready-to-publish level; however, proofreading services are often unaffordable for PhD students. This is the very reason why NNES doctoral students need help with their final drafts of manuscripts before submission. Some respondents stated that they needed help with proofreading, for example, *Someone good enough to help with proofreading*, but they did not expect such help from their doctoral programs. Others meant to rely on help from their peers: for example, *The best thing I can imagine is this: the students with English proficiency offering me a word that they are willing to read and rectify my writings.* Many students wanted to have free access to proofreading sites and software packages: e.g., *Free access to sites offering proofreading and text corrections*; *proof reading software*. Others thought that their respective program should provide them with this kind of help: for example, *From the proofreading service that the university provides; I will be appreciated if the Doctoral School provide us Grammarly package or English proofreading services; to have an Academic English center that revises students' work before submission*. Some responses implied certain restrictions, but they did not go into details whether their programs offered such services

under certain conditions only: e.g., *proofreaders hired by the doctoral school for research articles which are going to be published in any journals*.

7.4.2.6. Feedback from software

Previous research (e.g., Aghaee et al., 2016) indicated that the use of technology can help doctoral students to work more efficiently. Multiple software packages which can edit and correct students' texts are available on the markets. However, not every student may find them affordable. In our dataset, eight students mentioned that they thought a reliable software package would help them write better. Some students stated the names of specific programs: e.g., *Offering a complete and free access to English tools like Grammarly and Wordtune; access to use premium application, such as Grammarly.* The analysis revealed that one out of those eight responses mentioned the need for translation support (*better google translator*). It is understandable that NNES students think they need help in this area, as all the terms and statements translated must be academically appropriate.

7.4.2.7. Feedback from native speakers

Five students believed that their performance could improve if they had access to native speakers: e.g., *support by native teachers*; *access to native English speakers.* These responses indicated that native speakers are highly appreciated by these respondents in English as a lingua franca contexts. Previous publications also discussed beliefs about doctoral students' need of native speakers based on their experiences. NNES students often receive reviewers' comments suggesting that they should consult a native speaker regarding their EAW when their manuscripts are submitted and reviewed (Hanauer et al., 2019; Soler, 2019). Moreover, helping students in terms of their English academic writing at the doctoral level may not always be feasible in their doctoral schools, as it requires qualified faculty and funding. Not all successful and experienced writers know how to express explicitly how they write and this might lead to limitations in developing the students' EAW abilities (Kahn et al., 2016). It is logical to infer that these factors might influence participants' responses expressing the need of a native speaker to scaffold their EAW performance.

To conclude, all these findings on respondents' feedback needs indicate similar trends found in previous studies underpinning that feedback plays a decisive role in improving doctoral students' EAW abilities. Students are aware of their need to get feedback so that they can critically evaluate their own work, focus their attention on disciplinary structures and academic standards they need to meet, and present their ideas in academic texts (Carter & Kumar, 2017; Duncanson et al., 2020; Inouye & McAlpine, 2019; Odena & Burgess, 2017). The students' responses in this study indicate that they understand the essential role feedback plays in their EAW development.

7.4.3. The theme "One's own responsibility"

The analysis of the dataset indicated that 47 responses concerned students' self-efficacy, highlighting their recognition of personal responsibility in improving their EAW

performance. These responses were subsequently classified into four distinct sub-themes: Practice, Reading, Maintaining motivation, and Working hard (Table 7.1).

7.4.3.1. Practice

Twenty-eight students pointed out that they must resort to practice to achieve improvement in their EAW abilities. Some responses emphasized *Practice; Writing again and again,* whereas others were more specific about the areas in need of more practice and how they would go about it: for example, *More practice in synthesizing literature; participating in writing proposals and publishing materials; Small groups of students for writing and publishing together; Just writing and submitting papers in Q1 journals.* The need to provide doctoral students with authentic but low-stake practice was found to be an important component in supporting the students to successes fully complete their dissertation (Stevens & Caskey, 2022).

7.4.3.2. Reading

Studies have shown that reading has a strong positive impact on developing scholarly writing (Almatarneh et al., 2018; Ankawi, 2022; Lin & Morrison, 2021; Singh, 2014). In our dataset as well, ten students emphasized the importance of reading as the way of improving their EAW and leading to scholarly productivity. All the examples are related to what they think they need to do: for example, *reading more and more regarding research area*; *reading so many academic papers; Read more, learn more, and imitate writing more!* These responses indicate that students are fully aware of the role academic reading comprehension plays in improving their EAW abilities. A respondent who was self-assured about their English proficiency pointed out how important reading had been: *I don't think there are other ways of improving apart from reading academic journals, at least for me. My courses, from my bachelors were always in English so now I do not feel the need for that extra effort, but obviously there are always room for improvement.*

7.4.3.3. Maintaining motivation

Motivation always plays a key role in academic achievement; previous studies have highlighted the importance of maintaining motivation in scholarly productivity, especially during dissertation writing process (Holmes et al., 2018; Merç, 2016; Naylor et al., 2016). Five students in the dataset expressed the need to maintain their own motivation. Two mentioned the importance of believing in oneself (*It is up to me to search for more English academic journals to skill up; strengthen self-confidence*). Whereas three respondents elaborated on the importance of maintaining motivation to go forward (*my own motivation to do so self-support; Stimulation to publish more academic papers; My intrinsic motivation matters the most I think*).

7.4.3.4. Working hard

Four students emphasized that they needed to work harder, indicating that they were aware of their responsibility for their own progress: for example, *I should work harder; Only hard*

work, study by myself; self-study. Their awareness of their need to be self-dependent, a prerequisite of becoming independent scholars, was explicitly stated in their answers.

In summary, the analysis revealed that 17.67% of the 266 responses indicated that students know that their success depends on their own efforts and how much work they invest into improving their knowledge and abilities (Table 7.1).

7.4.3.5. No extra help needed

Ten students firmly stated that they needed no help at all. As for the underlying reasons, this theme of "No extra help needed" was classified into two sub-themes: Current support is sufficient; Current ability is sufficient (Table 7.1).

7.4.3.6. Current support is sufficient

Five responses claimed that the support they received was appropriate. Four students received the support they needed in their PhD programs, e.g., *I think I am ok with the current support I receive; My lab has an English professor who checks our academic papers. The support we have been getting: being required to write 3, fairly long papers in a semester and getting feedback is perfect for me*. One student pointed out that the support they needed was offered by their supervisor: *nothing, it is enough from Professor support*. However, according to the response of one of these five students, it can see seen that the support this respondent was referring to concerned research competency, not EAW support:

> *I just don't know why my school should offer me help with my English. The school should offer us editing services for publications and it does offer. The rest is up to the student, when you applied for this school you knew to get ready in terms of your English. The school must offer us research competences, should teach us to collect and analyze qualitative and quantitative data. The English level is a prerequisite for studying in such as school and I believe that the requirement is at least B2 level according to CEFR. I do not think that our instructors should give us feedback on our English written linguistic competences, they can comment on our pragmatic competence if they wish. As for research competence, the school offers us.* (P04)

In their response, the student provided a rationale for why the doctoral school has no responsibility for providing PhD students with English academic writing support: as the programs clearly stated their English language requirements, it is up to the students to make sure they meet EAW expectations, and they should not waste their professors' time by expecting feedback on their English. Although this response includes special terms related to communicative competence, the student used the terms linguistic and pragmatic competences incorrectly.

7.4.3.7. Current ability is sufficient

Five other students mentioned a different reason why they did not need additional help: they believed that their current level was good enough. One of them stated confidently that their

(My) *writing is already at a publishable quality.* The other four students' answers were also very positive*: I do not have any special needs regarding my English academic writing skills.; I reached a level that I'm happy with, so nothing more is necessary; I am comfortable in my case; I think I'm good*. These five responses corresponded to 1.85 % of the answers in the dataset indicating that only a few students were confident that they were well-equipped with EAW abilities; this result is in line with the findings of the study conducted in Hungary (Phyo et al, 2023).

7.4.4. Research Literacy

Accomplishing all doctoral tasks in time depends on students' capability in both conducting research tasks and disseminating their research findings at the expected scholarly level (Lambie et al., 2014). In the dataset, eight students addressed their need to improve their research literacy (see Table 7.1). Examples of their responses were as follows*: more practices in analyzing data by using a variety of tools; research methodology courses; Research Framework; Two types of courses - methodological papers and literature review*. These responses implied that students felt they needed special training in how to design a study, analyze data, as well as how to write different types of research articles. These points highlight the fact that developing EAW at the doctoral level cannot be separated from students' respective research disciplines.

7.4.5. Time

Six students pointed out in their responses that they needed more time (Table 7.1). However, the underlying reasons varied. Only one of them stated that they needed more time for their scholarly writing: *more time to write academic papers*. Two students mentioned that they needed free time; two other students wrote "*time*" only; not stating any reason why they needed it. One respondent did not specify they needed free time (*Trying niksen as stress-fighting tactic*); however, this response indicated their need to have time to relax to release stress and tension. Time is always a challenge for PhD students, as they often struggle to get all the scholarly requirements accomplished in time and to maintain their responsibilities as an adult in their personal life (Cornwall et al., 2019; Fung et al., 2017; Lim et al., 2022).

7.4.6. Access to resources

Previous studies (e.g., Hancock et al., 2019; Rafi et al., 2018) have highlighted the importance of providing doctoral students with access to resources and materials in this age of information and technology. In the dataset, three responses (Table 7.1) highlighted limitations students faced when they tried to access necessary resources: for example, *more access to databases; Regular discussion and availability of resources*. These students seemed to face situations in which they did not have access to the required databases, journals, or books when they used their institutional log in.

7.4.7. Finance

Even though EAW abilities do not seem to be associated with finance, all students need financial stability to take care of themselves and their family members they are responsible for as adults to submit their dissertation and publications in time. Finance also plays a key role at different stages of conducting research and researchers have proven that lack of financial support may negatively impact dissertation completion, students' academic achievement and well-being throughout their PhD journey (Cornwall et al., 2019; Fairman et al., 2021; Harman, 2003; Sverdlik et al., 2018). Only two responses in the dataset referred to *Financial support* and *Money*.

7.5. Discussion

This qualitative cross-sectional study explored what kind of support NNES doctoral students thought would be most helpful for them to achieve their goals in EAW. The responses reflected students' emic perspectives based on their personal experiences. Some important themes emerged from them, most of them in line with previous studies (Aitchison et al., 2012; Badenhorst & Xu, 2016; Lei & Hu, 2019; Wang & Parr, 2021; Xu & Zhang, 2019). A third of the responses in the study revealed that students thought they needed explicit instruction to improve their EAW abilities to reach the level necessary for successful completion of requirements in their respective doctoral programs. As a respondent pointed out, they needed courses on EAW: *I've never had an opportunity to learn this in any language at an official capacity, all my current knowledge is based on personal experience and my knowledge in English, most of which I acquired before starting university at all.* This text reflects many NNES students' lack of experience with and limited exposure to scholarly writing practices. Either they learned how to write by themselves without formal instruction, or they did not know much about writing scholarly texts in a discipline-oriented way. These outcomes are in line with findings of previous studies and underpin what researchers have stated: students need explicit instruction in EAW as an integral part of their programs (Belcher, 2007; Caffarella & Barnett, 2000; Lin & Morrison, 2021; Lindley et al., 2020; Odena & Burgess, 2017).

The results revealed that the students were fully aware of the specific areas in which they needed support to reach the level they considered appropriate. The majority (79%) of the coded responses expressed the need to get support individually in personalized ways. Only one outlier student claimed explicitly that students should not expect their doctoral programs to help them with English academic writing, as language proficiency was already a requirement for PhD entry. Most respondents did specify what they needed, although all of them had been admitted to their PhD programs, as they had met English language requirements and they also had at least one master's degree. The outcomes revealed that meeting language requirements and EAW experiences in writing a master thesis do not guarantee that students are equipped with appropriate EAW abilities, as writing a master thesis is different from writing a PhD dissertation, as was pointed out in previous publications (Jafari et al., 2018; Hanauer et al., 2019; Kirk & Lipscombe, 2019; McAlpine, 2020).

The findings also showed that only five out of 266 coded responses (1.88% of the whole dataset) stated that their EAW abilities allowed them to do their doctoral writing tasks. These results are in line with findings of an analysis of the students' metaphors (Phyo et al., 2023a): they reflected that respondents were aware of the complex and demanding nature of the EAW process and only a few students were confident to declare that they were competent. Students knew that they still needed to improve their knowledge in terms of scholarly productivity, and they were willing to make all the necessary efforts to progress academically.

To summarize, most students acknowledged the challenging nature of EAW, they were also fully aware of the areas they needed to address to develop their EAW abilities, and they were willing to take responsibility for their learning. More specifically, about half of the responses conveyed the message that doctoral students should be autonomous learners, in line with previous research (Carter & Kumar, 2017).

Other studies have shown that the scholarly support doctoral students receive has a positive impact on their psychological well-being. Although the types of support students receive are normally technical in nature, knowing that their needs are taken care of to help them reach their goals makes them feel accepted, safe, motivated, and willing to take risks (Duff et al., 2019; Duff & Anderson, 2015; Kim & Duff, 2012; West et al., 2011). Therefore, the findings of this study offer valuable insights in terms of doctoral EAW support to all the stakeholders in PhD programs.

7.6. Conclusions

The findings of this qualitative analysis align consistently with previous studies, emphasizing critical themes in participants' lived experiences, such as the need for explicit instruction to enhance English academic writing skills (Aitchison et al., 2012; Lin & Morrison, 2021; Odena & Burgess, 2017; Phyo et al., 2022b, 2022c). Most participants expressed this need, underscoring a lack of formal training and limited exposure to scholarly writing practices. This highlights the recurring necessity of incorporating EAW instruction as an integral part of doctoral programs, a point consistently found not only in the review of the selected studies presented in Chapter 2 but also in the chapters of this dissertation – the exploratory qualitative study in Chapter 4 allowed students to articulate specific areas of EAW they wished to improve. The large-scale quantitative study in Chapter 5 revealed that students lacked confidence in their EAW abilities at the beginning of their PhD studies. In line with these findings, the students' conceptual metaphors presented in Chapter 6 provided an emic perspective on the challenges faced as novice writers from non-English-speaking backgrounds.

The findings of the current study emphasized the importance of personalized support tailored to students' specific needs, highlighting the importance of structured EAW courses directly addressing the demands of doctoral writing. Despite prior experience in writing master's theses being prerequisites for PhD admission, for most respondents it did not guarantee sufficient EAW abilities for doctoral-level writing. The analysis also revealed that only a small fraction of students felt highly confident in their EAW abilities, highlighting the

complexity and demanding nature of the EAW process along the doctoral journey. However, most students demonstrated a strong commitment to improvement and autonomy in their learning, consistent with the findings of the large-scale quantitative study on students' self-assessment of their EAW autonomy (presented in Chapter 5).

Moreover, the current study emphasizes that providing necessary EAW support positively influences doctoral students' psychological well-being, fostering acceptance in their academic communities, safety, motivation, and willingness to take risks. This aligns with the findings of the large-scale quantitative study, which revealed statistically significant correlations among students' current EAW skills and the quality of the feedback they received, their ability to manage emotions and motivation (Chapter 5). Therefore, the insights gained from this study support the findings of previous research, both in the exploratory study presented in Chapter 4 and the quantitative large-scale study presented in Chapter 5. These findings offer valuable guidance to all stakeholders involved in PhD programs; they inform them about effective strategies for supporting NNES doctoral students' EAW development.

The survey used in the large-scale quantitative study was developed based on the results of the selected studies presented in Chapter 2 and the exploratory qualitative study presented in Chapter 4. The findings of the current study are in line with the constructs included in the survey: they included not only EAR, EAW development, research knowledge, feedback, ability to overcome EAW challenges (autonomy and competence), grammar, ability to critically engage with literature, receiving necessary support from the respective academic community, the importance of English academic reading in EAW, and maintaining motivation. This needs analysis highlights the reliability of the survey developed based on the findings of the selected studies (Chapter 2) and the exploratory qualitative study. Moreover, it also underscores the consistent findings across the selected studies (Chapter 2), the exploratory qualitative study (Chapter 4), the large-scale quantitative study (Chapter 5), and the metaphor analysis study (Chapter 6).

Therefore, the findings of this study are fully in line with Hyland’s (2018) definition of academic English: it is a language education approach which is based on academic conventions, the need of targeted audience, and ability to communicate at an expected scholarly level. In addition, the students’ responses expressing their need for targeted support overlap with scholars’ emphasis on genre awareness as a crucial skill in academic writing and the importance of academic discourse communities (Hyland, 2015, 2020; Johns, 2011; Swales, 2019). The fact that students highlighted the need for help in EAW improvement and the need for support from their respective community also reflects the key role of language socialization (Duff & Anderson, 2015; Duff & Doherty, 2014; Kim & Duff, 2012).

In conclusion, the study acknowledges the challenging nature of EAW, coupled with the awareness of areas in need of improvement. It reinforces the notion that developing EAW at the doctoral level is an integral part of social interactions. Doctoral students should also be autonomous as they socialize into their respective academic communities, as emphasized in the exploratory qualitative inquiry, the large-scale quantitative study, and the metaphor analysis.

CHAPTER 8. CONCLUSIONS

Chapter 8 comprises three sections. The first one offers a summary of the results presented in the previous chapters. The second section discusses implications arising from the findings. The third one addresses the limitations of the research. These three sections in Chapter 8 are meant to serve as a synthesis of the whole research project.

8.1. Conclusions of the overall research project

This research project comprised a multifaceted examination of NNES doctoral students' experiences in EAW as they progressed towards completing their PhDs. The mixed method research designed helped understand the relationships among NNES participants' EAW abilities and various factors, such as English academic reading skills, research abilities, feedback quality, managing emotions and motivation. Moreover, a temporal aspect included in the survey offered insights into how these variables changed over time based on students' self-assessments. The qualitative inquiries offered new finely detailed insights into students' lived experiences through their metaphors and their particular needs they worded in response to open questions. These reflect students' unique EAW journeys and identify the kind of support they need to enhance their EAW abilities and to achieve their goals.

Adopting an exploratory sequential mixed-methods research design (Creswell & Creswell, 2018; Mackey & Gass, 2011), combining qualitative and quantitative approaches, this research project revealed the complex and dynamic nature of NNES doctoral students' EAW development. The critical review of selected studies in Chapter 2 laid the groundwork for this project. Despite limitations in sample sizes and diverse participation ratios, the literature review defined the key dimensions: challenges in vocabulary, grammar, syntax, paraphrasing, writing a literature review, idea development, academic reading, critical engagement with texts, and the emotionally demanding nature of academic writing for NNES novice writers at the PhD level (Aitchison et al., 2012; Badenhorst & Xu, 2016; González-Ocampo & Castelló, 2018; Jomaa & Bidin, 2017; Lei & Hu, 2019; Odena & Burgess, 2017; Rezaei & Seyri, 2019; Wang & Parr, 2021). The review underscored the complexity of factors influencing participants' EAW abilities, such as prior literacy, research abilities, academic reading abilities, feedback, coping with emotions and maintaining motivation.

Chapter 4, the exploratory qualitative study, served as the initial phase of the whole project, involving a small sample of NNES doctoral students in one doctoral program. The emerging themes from the qualitative dataset collected from the thirteen participants of diverse linguistic backgrounds offered valuable insights into their needs to improve in various aspects of their EAW. The emergence of genre as a key concern among students mirrors the observations made by Aitchison et al. (2012) and Lei & Hu (2019). Likewise, the desire to enhance the ability to articulate ideas coherently echoes findings from previous studies (Jafari et al., 2018; Odena & Burgess, 2017; Ramírez-Castañeda, 2020). Additionally, the aspiration for conciseness reflects a common goal identified in the works of Almatarneh et al. (2018)

and Jalongo et al. (2014). Addressing citation and referencing challenges aligns with the literature (Huwari & Al-Shboul, 2015; Langum & Sullivan, 2017), while acknowledging the importance of regular writing practice resonates with the insights of Aitchison et al. (2012) and Lei & Hu (2019). Furthermore, challenges the students face in turning what is in their head into textual forms corresponds to the demanding nature of academic writing skills highlighted by Almatarneh et al. (2018), Hyland & Shaw (2016), and Odena & Burgess (2017). Students' expressed need to enrich their vocabulary, particularly with academic and technical terms, mirrors the findings of Mohammad Almatarneh et al. (2018) and Rezaei & Seyri (2019). Concerns about idea flow and development align with literature emphasizing the interconnectedness of effective idea development and academic writing coherence (Chatterjee-Padmanabhan & Nielsen, 2018; González-Ocampo & Castelló, 2018). Additionally, recognition of the audience's role in academic writing resonates with students' awareness of the need to tailor their writing to specific readerships (Duff, 2008; Hyland, 2018). Challenges in paraphrasing reflect findings from previous studies (Almatarneh et al., 2018; Bachiri & Oifaa, 2020; Xu & Zhang, 2019), while the expressed need to improve research methodology knowledge aligns with the understanding that effective academic writing is intertwined with research competence (Badenhorst & Xu, 2016; Jomaa & Bidin, 2017; Kotamjani et al., 2018). Emphasizing grammatical accuracy echoes publications highlighting the role of linguistic competence in academic writing (Jafari et al., 2018; Lin & Morrison, 2021), whereas recognition of the importance of reading in the writing process aligns with established findings in the literature emphasizing the reciprocal relationship between reading and writing (Aitchison et al., 2012; Jomaa & Bidin, 2017; Kotamjani et al., 2018). Consequently, the findings of this study deepen our understanding of the EAW areas in which NNES doctoral students would like to improve. All these aligned with the findings of the selected studies in Chapter 2. The findings from the exploratory study played a foundational role in shaping the subsequent, more extensive quantitative analyses. By exploring the students' experience of their doctoral-level academic writing within the specific context of Hungary, this chapter laid the groundwork for a comprehensive examination of NNES doctoral students' EAW experiences in Hungary.

Building upon the findings of Chapter 4, Chapter 5 presented a large-scale quantitative study that investigated the relationship between NNES doctoral students' EAW abilities and various factors. The results revealed the progression in self-assessed EAW as well as research abilities throughout the doctoral program, clarifying the pivotal role of academic years in developing these abilities. The participants, who initially demonstrated high self-assessed scores in English literacy (RQ1) and academic writing aligned with doctoral-level expectations, claimed to have achieved significant improvement in academic writing abilities over time (RQ2), which is consistent with previous studies (Aitchison et al., 2012; Almatarneh et al., 2018; Bean & Melzer, 2021; Bruce, 2018; Odena & Burgess, 2017; Swales & Freak, 2012). However, lower scores in critical thinking suggested areas for continued growth and targeted interventions. While participants felt less confident in procedural aspects of conducting research (e.g., designing the instrument, analyzing data) at the start of the PhD studies, they were more confident about their research procedural abilities after an extended period (RQ3), aligning with previous research findings (Castelló et al., 2021; Ismail &

Meerah, 2012; Mills, 2009; Mosyjowski & Daly, 2020; Rogers & Göktaş, 2010). English academic reading abilities were generally strong, with room for improvement in specific areas, such as comprehending academic texts without rereading and enriching technical lexicon (RQ4); these outcomes are also consistent with prior studies (Badenhorst & Xu, 2016; Chatterjee-Padmanabhan & Nielsen, 2018; Jomaa & Bidin, 2017; Odena & Burgess, 2017).

Positive views of feedback from various sources, especially thesis advisors, highlighted the pivotal role of mentorship in academic writing development (RQ5), as found in previous publications (Basturkmen et al., 2014; Caffarella & Barnett, 2000; Hattie & Timperley, 2007; Kamler & Thomson, 2014). Participants demonstrated positive perceptions of their abilities to manage stress and anxiety (RQ6). They also reported positive self-assessments of their autonomy and competence in EAW, with satisfaction in the support received from the doctoral school, contributing to their overall positive outlook and motivation (RQ7), aligning with previous studies. Key roles were identified for gender and level of English proficiency: male students reported significantly higher self-assessed scores, and higher English proficiency correlated also significantly with enhanced academic writing, reading, and research knowledge. Similar results were found in previous research (Carless et al., 2011; Hattie & Timperley, 2007).

Moreover, this study is an innovation, as it is the first to examine the extent to which identified independent variables influence current EAW, filling a crucial gap in the literature. The relationships among the students' current EAW abilities and other variables revealed that EAW at the doctoral level is dynamic and multifaceted (RQ8), underpinning claims in previous research (Badenhorst & Xu, 2016; Jomaa & Bidin, 2017; Kotamjani et al., 2018).

The regression analysis (RQ9) underscored that the independent variable explains up to 84% of students' EAW at the current point in PhD studies, highlighting the enduring impact of initial writing proficiency, interconnectedness of reading and writing competencies, and continuous development of research knowledge on participants' current academic writing abilities. These outcomes confirm research findings in previous studies (Jeyaraj, 2020; Kotamjani et al., 2018; Lin & Morrison, 2021; Murakami et al., 2011; Yeh & Inose, 2003). Overall, this large-scale quantitative study provides a comprehensive understanding of NNES doctoral students' academic writing development, indicating the important role of feedback, language proficiency in the target language, and respective doctoral schools' support to enhance doctoral students' success in EAW.

The metaphor analysis in Chapter 6 explored respondents' conceptualizations of their EAW experiences. Through vivid metaphors, such as "building a Jenga tower under a wooden bridge using fish that can only be caught in fresh water from 6 am to 7 pm in the fall," this chapter added a new and in-depth layer to the understanding of the complex and multifaceted nature of academic writing depicted in literature (Badenhorst & Xu, 2016; Jomaa & Bidin, 2017; Kotamjani et al., 2018). The struggles NNES doctoral students coped with could also be seen in metaphors such as "trying not to sink with the ship." Students' willingness to contribute to their academic communities and their expectation that their contribution would

be valuable could also be seen in metaphors such as “serving a good meal on the table that the guests can enjoy!” The metaphorical lens complemented the quantitative findings and provided nuanced insights into the complex and dynamic dimensions of NNES doctoral students' journeys as part of their academic writing process. Moreover, this study revealed new conceptual metaphors that were not found in the literature, indicating that NNES doctoral students in 65 PhD programs using 49 mother tongues perceived their academic experience in the EAW journey differently. This metaphor analysis complemented the findings of both the exploratory study (Chapter 4) and the large-scale quantitative study (Chapter 5) in meaningful ways. It revealed that metaphor elicitation is a valuable research tool in educational contexts, allowing students to freely conceptualize their emic perspective without the need to worry about lexical limitations (Lakoff & Johnson, 1980).

The qualitative study presented in Chapter 7 revealed the specific types of support the students believed to be essential for enhancing their EAW performance. By illuminating students' individual perspectives and needs, this chapter shed light on the multifaceted dimensions of support necessary in the context of doctoral-level academic writing. Findings emphasized the demand for explicit instruction and personalized support. A third (33.46%) of the 255 participants needed formal instructions to enhance language proficiency, academic lexicon, grammar, and critical thinking. Additionally, 37.79% wanted timely feedback from various sources such as advisors, mentors, research experts, peers, and doctoral course instructors. Moreover, 17.67% believed they were solely responsible for their doctoral writing and relied on increased practice, literature engagement, motivation, and hard work. Another 3.76% expressed satisfaction with their current writing abilities and the support received from their PhD programs. A small percentage of students identified specific needs: 3.01% required training in research literacy, 2.26% sought more time, 1.13% desired access to all necessary academic resources, and 0.75% hoped for financial support. These findings highlight diverse needs of academic writing support for novice academic writers and emphasize the importance of tailored support mechanisms for NNES doctoral students, in line with findings of the overview of the literature (Chapter 2), the exploratory study (Chapter 4), the large-scale survey (Chapter 5), as well as the metaphor (Chapter 6) and the needs analysis (Chapter 7).

Overall, this research project provides a comprehensive picture of NNES doctoral students' EAW journey: new insights, quantitative data analyses, metaphorical representations, and specific support needs. Emphasizing the challenges, complexities, and the evolving nature of EAW needs, the project underscores the importance of tailored interventions, mentorship, and structured EAW courses in doctoral programs. The findings contribute to both theoretical frameworks and practical considerations for supporting NNES doctoral students in their academic writing endeavors. The results emphasize the ongoing efforts required to create a supportive environment conducive to the academic success of NNES doctoral students as they become bona fide members of their research communities.

8.2. New insights and implications

8.2.1. New insights

The research project introduced innovation by examining the temporal evolution of NNES students' EAW abilities through their own self-assessments. Conducting a large-scale quantitative study at two distinct time points—initial stages and the current point in their PhD studies—offers a dynamic lens to observe the developmental process of NNES doctoral students' EAW skills. This temporal exploration addresses a gap in the literature and provides a fresh and insightful perspective on the temporal dimension of academic writing proficiency. Going beyond a narrow focus on EAW abilities, the research project offers a comprehensive investigation into the interrelationships among various factors – as no previous quantitative studies have covered all these independent variables, this research project is innovation in this regard. By examining the relationships among objective measures of English proficiency, participants' self-perceived English literacy background, EAW abilities, English academic reading, knowledge of their research area and methodologies, managing emotions, feedback, and motivation, the study offers a comprehensive approach. The unique aspect is the holistic examination of these factors through a large-scale quantitative study, plus the qualitative analyses adding depth to our understanding of the challenges NNES doctoral students face.

The incorporation of metaphor analysis provides a qualitative layer to the research; it offers a vivid and subjective understanding of NNES students' lived experiences related to EAW. Additionally, the exploration of support needs adds a practical dimension, highlighting the specific interventions considered crucial by the respondents for enhancing their EAW proficiency. This integrated qualitative and quantitative mixed method design adds a valuable contribution to existing literature by bridging the gap between subjective experiences and practical requirements.

The research project addressed a specific contextual gap by focusing on Hungary, where English serves as the academic lingua franca. This underexplored context provides a unique opportunity to investigate NNES international students' EAW experiences in a large number of English-medium doctoral programs where not only the students, but the teachers are also NNES. The findings from this context contribute valuable insights that can inform both local practices and the broader understanding of NNES doctoral students' and their teachers' challenges, thereby enriching the global discourse on EAW. By employing mixed methods, the research project integrated a holistic approach to understanding NNES doctoral students' EAW experiences based on pre-set and emerging themes. This methodological synergy adds depth and nuance to the exploration of NNES students' lived experiences during their academic writing journey, contributing to a nuanced and comprehensive understanding of EAW at the doctoral level.

In conclusion, the innovative qualities of this research project, encompassing its temporal dimension, regression analysis and metaphor analysis, focus on support needs, and contextual investigation in Hungary, collectively contribute to advancing our understanding of NNES doctoral students' EAW experiences. The multi-faceted approach not only enhances literature

but also offers practical insights that can inform stakeholders, educational practices, and support mechanisms for NNES doctoral students on a global scale.

8.2.1. Implications

The implications drawn from this research underscore the critical need for tailored pedagogical approaches and comprehensive support systems in doctoral programs to enhance NNES doctoral students English academic writing abilities. Understanding and acknowledging the challenges they face is fundamental to provide them with effective support and foster their academic writing proficiency. NNES students need EAW instruction tailored to their needs over time.

Prospective NNES doctoral students should be adequately prepared for the demands of PhD studies, especially in terms of academic writing. Pre-entry courses or workshops focusing on academic English, critical thinking, and research skills can be instrumental. These preparatory programs should be designed to familiarize students with the academic discourse and expectations, enabling a smoother transition into doctoral studies. Institutional readiness initiatives should commence early in the academic journey and scaffold students' socialization into their respective communities.

Doctoral programs should integrate EAW instruction throughout the academic journey. Beginning with foundational skills and progressively advancing to more complex writing tasks, this approach would ensure consistent development of students' EAW abilities. Beyond linguistic competence and advanced level proficiency in English, curricula should encompass critical thinking, and research abilities, aligning with the unique needs of NNES doctoral students. Sustainable growth in academic writing necessitates a curriculum that evolves alongside the students' capabilities.

Curriculum designers should recognize and bridge language and academic gaps that NNES students might face. Integrating explicit instruction to improve academic language skills, providing and emphasizing academic conventions will significantly enhance their ability to articulate their research effectively. Pedagogy should be tailored to address specific linguistic challenges and academic needs in particular programs.

By aligning the curriculum with the specific needs of NNES doctoral students, educational institutions can facilitate not only improved academic writing but also the dissemination of their research work to a broader international audience. This approach would ensure that their contributions align with globally recognized academic standards and promote inclusivity and diversity in academic discourse.

Institutions should strive to create supportive communities that embrace diversity and multiculturalism. Providing platforms for cultural exchange, organizing support groups, and encouraging peer mentorship programs can enhance NNES doctoral students' sense of belonging and well-being and positively impact their EAW development.

Moreover, it is crucial for researchers and educators to display awareness and sensitivity towards NNES doctoral students' unique experiences and needs. They should acknowledge and appreciate their diverse linguistic and cultural backgrounds, respect their viewpoints, and cultivate inclusive research environments that nurture their growth and advancement. Sensitivity and understanding are key elements in the educational journey of NNES doctoral students.

The findings suggest future directions for further investigation. Studies could explore the effectiveness of specific instructional interventions and support strategies in enhancing the EAW abilities of NNES doctoral students. Longitudinal studies tracking their progress in their EAW abilities could provide valuable insights into the long-term impact of support systems and interventions. Research should continually inform strategies for enhancing EAW abilities through empirical investigations.

In conclusion, using the findings of this research project can lead to improved pedagogical approaches, enhanced support systems, and inclusive curriculum design that foster the development of NNES doctoral students' EAW abilities. By addressing their specific needs, raising awareness among researchers, educators, and students themselves, and continuing to advance our understanding through further research, institutions can create an environment that empowers NNES doctoral students and promotes their academic success in English academic writing. Collective efforts are essential for enabling NNES doctoral students to excel in their academic writing pursuits.

8.3. Limitations

While this research project presented in the dissertation provides useful new insights into various aspects of NNES doctoral students' English academic writing abilities and related factors, it is important to acknowledge its limitations.

First, as participation in this study was voluntary, this may have attracted individuals who were more willing to share their views and felt more secure and confident about their own abilities. This could lead to an underrepresentation of those who faced many challenges or dropped out of their programs.

Second, the project did not capture the perspectives of key stakeholders, such as thesis advisors, doctoral course instructors, and faculty members, whose insights could contribute to a more comprehensive understanding of the academic writing landscape for NNES doctoral students.

Third, the study relied on self-assessments and self-reported data, which are subject to biases and individual perceptions. Participants' self-assessments may not fully align with their actual abilities or may be influenced by factors such as social desirability bias or lack of awareness about their own limitations. Additionally, the lack of empirical evidence about students' writing abilities, such as objective measures or assessments, should be born in mind as a limitation concering the robustness of the findings.

Fourth, it is essential to acknowledge that the sample size of the study may limit the generalizability of the conclusions to the entire doctoral student population in Hungary. The participants were volunteers, and they were not a representative sample of international doctoral students.

Fifth, the study focused on NNES international doctoral students in Hungary, which may limit the generalizability of the findings to students in other educational systems. The unique characteristics of the Hungarian context, such as language requirements and cultural factors, may have influenced the results.

Sixth, the study did not explore the role of AI technology in enhancing doctoral students' scholarly writing abilities, an area of growing importance in contemporary education. Investigating the impact of AI tools on academic writing in English is expected to provide additional insights into potential advancements and challenges in this field.

Despite these limitations, the results contribute valuable insights into the literature on NNES doctoral students' academic writing abilities and key factors interacting with them. Although it is important to acknowledge these limitations as they provide opportunities for future research to address these gaps and further advance our understanding of NNES doctoral students' experiences and needs in English academic writing, I hope that the new knowledge gained by conducting these studies gave readers a valid, reliable, trustworthy, and credible picture of what it is like to be an NNES doctoral student in Hungary today. Future research could explore the effectiveness of specific interventions and employ longitudinal designs to provide a more comprehensive understanding of doctoral students' academic writing development.

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APPENDIX A

Ethical approval

University of Szeged
Institutional Review Board
Doctoral School of Education

6722 Szeged, 30-34 Petőfi S. Av., Hungary
Phone/fax: +36 62 544-032

Wai Mar Phyo
PhD Student: Doctoral School of Education
Reference number: 17/2021
Subject: Ethical evaluation of a research project

Date: 2 November, 2021

ETHICAL APPROVAL

The Insitutional Review Board (IRB) of the Doctoral School of Education, University of Szeged has recently reviewed your application for an ethical approval (Title of the Research Project: "**How PhD students cope with academic writing requirements: A study of PhD students in the Doctoral School of Educational Sciences at the University of Szeged**", supervisors: Dr. Marianne Nikolov and Dr. Ágnes Hódi). This proposal is deemed to meet the requirements of the ethical conducts on social research with human subjects of the Doctoral School of Education, University of Szeged.

IRB decision: approved

Justification:
The research project meets the requirements of the professional-ethical criteria of the social research including human subjects within the field of education science. Main goal of the study is to examine the English academic writing challenges that PhD students at the Doctoral School of Educational Sciences, University of Szeged, and analyze their influencing factors. Participants are 50 PhD students as well as their supervisors and tutors. No students under the age of 18 will participate in the study. Data are collected via Interviews and Questionnaires and Analyses of students' academic written texts by using the tool for the automatic analysis of lexical sophistication (TAALES) before and after receiving feedback from supervisors and reviewers. Participation is voluntary and anonymous. Informed consent from the participants will be asked. Procedure of the data collection does not harm their privacy law, it does not have an impact on the participants' mental or physical health. Data cannot be handled by persons to whom they are not concerned.

In a summary, full ethical approval has been granted.

We wish you all the best for the conduct of the project.

Prof. Dr. Bettina Pikó
IRB coordinator

APPENDIX B

Survey

1. English literacy at the start of PhD studies

ELS1	My general English proficiency was at advanced level.
ELS2	I could comprehend English academic texts well.
ELS3 (Deleted)	In my first language, I was good at writing academic texts.

2. English academic writing at the start of PhD studies

EAW1	My special English vocabulary was not good enough to write my course assignments.
EAW2	I knew how to write a literature review in English.
EAW3	I did not know how to write a research paper in English.
EAW4	I was familiar with guidelines like APA or MLA.
EAW5	I had no experience in English academic writing.
EAW6	I could write so that my audience understood the meaning clearly.
	At the beginning of the program, when I wrote in English, I had difficulties with
EAW7	paraphrasing texts
EAW8	citing and referencing sources
EAW9	organizing paragraphs
EAW10	grammar
EAW11	special vocabulary
EAW12	writing paragraphs
EAW13	presenting ideas logically
EAW14	stating problems clearly
EAW15	summarizing key points
EAW16	drawing conclusions
EAW17	being critical

3. Research knowledge and abilities at the start of PhD studies

	When I started the doctoral program, I had a good knowledge of
RS1	my research area
RS2	research design and research methodology
RS3	finding and analyzing the special literature
RS4	designing research instruments
RS5	formulating research questions
RS6	analyzing data
RS7	how to write a publishable paper in English

4. English academic reading

	At this point in my doctoral studies
EAR1	I rarely have difficulty with comprehending technical words or phrases.
EAR2	I can understand the details in long complex texts without using a dictionary.
EAR3	I can understand journal articles without rereading difficult sections.
EAR4	I can use my critical thinking to determine how well a publication is researched.
EAR5	I can use my critical thinking to decide the validity of arguments in a text.

5. English academic writing at the current point of PhD studies

EAWN1	I can write clear, highly accurate and smoothly flowing complex academic texts.
EAWN2	I can show flexibility in formulating ideas in differing linguistic forms to convey meaning precisely.
EAWN3	I have a good command of specific vocabulary related to my larger field of study.
EAWN4	I can create coherent and cohesive texts.
EAWN5	I can use a wide range of connectors and other cohesive devices.
EAWN6	I can demonstrate consistent and highly accurate grammatical control of complex language forms.
EAWN7	Errors are rare in my texts.
EAWN8	I can write clear, smoothly flowing, complex texts.
EAWN9	I can write a critical overview of the relevant literature.
EAWN10	I can write a publishable paper on an empirical study I designed and implemented.
	Now, when I write in English, I have no difficulties with
EAWN11	paraphrasing texts
EAWN12	citing and referencing sources
EAWN13	organizing paragraphs
EAWN14	grammar
EAWN15	special vocabulary
EAWN16	writing paragraphs
EAWN17	presenting ideas logically
EAWN18	stating problems clearly
EAWN19	summarizing key points
EAWN20	drawing conclusions
EAWN21	being critical
EAWN22	using guidelines like APA or MLA

6. Research knowledge and abilities at the current point of PhD studies

	Now I feel confident that I have a good knowledge of
RN1	my research area
RN2	research design and research methodology
RN3	finding and analyzing the special literature
RN4	designing research instruments
RN5	formulating research questions

RN6	analyzing data
RN7	how to write my dissertation in English

7. Teachers' feedback

TFEED1	I had access to clear guidance on the requirements for English academic writing.
TFEED2	I got helpful feedback from my tutors on the content of on my written assignments.
TFEED3	I got helpful feedback from my tutors on the academic English of on my written assignments.
TFEED4	The feedback from my thesis advisor was helpful on the content of my work.
TFEED5	My thesis advisor gave me detailed feedback on the academic English of my work.
TFEED6	Tutors in my doctoral program offer consistent feedback on my English skills.
TFEED7	I could use the feedback I received to improve my written work.

8. Peer feedback

PFEED8	The feedback I got from my peers helped me edit the English of my written work.
PFEED9	Peer feedback was useful about the content of my written work.

9. Attitudes towards feedback (Deleted)

Att1(Deleted)	I wish I could get faster feedback on my written work.
Att2(Deleted)	More detailed feedback would be helpful on my written work.
Att3(Deleted)	I feel helpless when feedback is only critical but not helpful.
Att4(Deleted)	Feedback on my strengths motivates me to work harder.
Att5(Deleted)	I feel discouraged when I get feedback on my weaknesses.
Att6(Deleted)	I would like to get more corrective feedback on my academic English writing.

10. Coping with emotions

EMO1	I can handle my stress and anxiety successfully.
EMO2	I've managed to maintain my motivation to complete my doctoral work.

11. Factors positively affecting students' motivation

MOTI1	I can manage to overcome the challenges I faced in English academic writing.
MOTI2	I feel that my academic English writing abilities have improved.
MOTI(Deleted)	It is up to me how well I can write in English.
MOTI3	My doctoral program offers good support in English academic writing.
MOTI4	My doctoral program has clear criteria on how written assignments in English are assessed.
MOTI (Deleted)	Access to journals and other reference materials is poor in my program.
MOTI (Deleted)	Internet access is never a problem.
MOTI5	I get all the help I need to be successful.

MOTI (Deleted)	I rarely got helpful feedback on all my written assignments in the credit courses.

APPENDIX C

Significant differences in EAW self-assessments of C2, C1 and B2 groups

Significant differences in EAW self-assessments of C2, C1 and B2 groups at the start of PhD studies							
			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
My special English vocabulary was not good enough to write my course assignments.	B2	C2	-1.533*	0.314	0.000	-2.27	-0.79
		C1	-1.151*	0.177	0.000	-1.57	-0.73
I knew how to write a literature review in English.	B2	C2	-.80342*	0.30085	0.022	-1.5127	-0.0941
		C1	-.46721*	0.16963	0.017	-0.8671	-0.0673
I did not know how to write a research paper in English.	B2	C2	-.80342*	0.30085	0.022	-1.5127	-0.0941
		C1	-.46721*	0.16963	0.017	-0.8671	-0.0673
I was familiar with guidelines like APA or MLA.	B2	C2	-.92385*	0.36037	0.029	-1.7735	-0.0742
		C1	-.51555*	0.20319	0.031	-0.9946	-0.0365
I had no experience in English academic writing.	B2	C2	-.81546*	0.33795	0.044	-1.6122	-0.0187
		C1	-.92205*	0.19055	0.000	-1.3713	-0.4728
I could write so that my audience understood the meaning clearly.	B2	C2	-.83955*	0.24768	0.002	-1.4235	-0.2556
		C1	-.44378*	0.13965	0.005	-0.773	-0.1145
paraphrasing texts	B2	C2	-1.36325*	0.33309	0.000	-2.1486	-0.5779
		C1	-1.16497*	0.18781	0.000	-1.6078	-0.7222
citing and referencing sources	B2	C2	-.94949*	0.35981	0.024	-1.7978	-0.1012
		C1	-.61015*	0.20287	0.008	-1.0885	-0.1319
organizing paragraphs	B2	C2	-1.04701*	0.33311	0.005	-1.8324	-0.2617
		C1	-.92632*	0.18782	0.000	-1.3691	-0.4835
grammar	C2	C1	.73589*	0.31184	0.050	0.0007	1.4711
	B2	C2	-1.81702*	0.31162	0.000	-2.5517	-1.0823
		C1	-1.08112*	0.1757	0.000	-1.4954	-0.6669
special vocabulary	B2	C2	-1.65346*	0.30458	0.000	-2.3716	-0.9354
		C1	-1.05158*	0.17174	0.000	-1.4565	-0.6467
writing paragraphs	B2	C2	-1.40171*	0.31137	0.000	-2.1358	-0.6676
		C1	-.97930*	0.17556	0.000	-1.3932	-0.5654
presenting ideas logically	B2	C2	-.89355*	0.31649	0.014	-1.6397	-0.1474
		C1	-.84888*	0.17845	0.000	-1.2696	-0.4282
stating problems clearly	B2	C2	-.90249*	0.31849	0.014	-1.6534	-0.1516
		C1	-.86487*	0.17958	0.000	-1.2882	-0.4415
summarizing key points	B2	C2	-.96154*	0.33027	0.011	-1.7402	-0.1829
		C1	-.76326*	0.18622	0.000	-1.2023	-0.3242
drawing conclusions	B2	C2	-1.17444*	0.31128	0.001	-1.9083	-0.4406
		C1	-.62585*	0.17551	0.001	-1.0396	-0.2121
being critical	B2	C2	-1.12743*	0.345	0.004	-1.9408	-0.314
		C1	-.68229*	0.19453	0.002	-1.1409	-0.2237
Significant differences in EAW self-assessments of C2, C1 and B2 groups at the current point of PhD studies							

Tukey HSD			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
I can write clear, highly accurate and smoothly flowing complex academic texts.	B2	C2	-.88578*	0.25626	0.002	-1.49	-0.2816
		C1	-.46729*	0.14449	0.004	-0.8079	-0.1266
I can show flexibility in formulating ideas in differing linguistic forms to convey meaning precisely.	B2	C2	-.75214*	0.24364	0.006	-1.3266	-0.1777
		C1	-.57110*	0.13737	0.000	-0.895	-0.2472
I have a good command of specific vocabulary related to my larger field of study.	B2	C2	-.90754*	0.21682	0.000	-1.4187	-0.3964
		C1	-.42713*	0.12225	0.002	-0.7153	-0.1389
I can create coherent and cohesive texts.	B2	C2	-.86519*	0.2228	0.000	-1.3905	-0.3399
		C1	-.38322*	0.12562	0.007	-0.6794	-0.087
I can use a wide range of connectors and other cohesive devices.	C2	C1	.56897*	0.22223	0.030	0.045	1.0929
		B2	1.13248*	0.22208	0.000	0.6089	1.6561
	B2	C2	-1.13248*	0.22208	0.000	-1.6561	-0.6089
		C1	-.56351*	0.12522	0.000	-0.8587	-0.2683
I can demonstrate consistent and highly accurate grammatical control of complex language forms.	B2	C2	-1.19852*	0.22374	0.000	-1.726	-0.671
		C1	-.73379*	0.12615	0.000	-1.0312	-0.4364
Errors are rare in my texts.	B2	C2	-1.21639*	0.2653	0.000	-1.8419	-0.5909
		C1	-.69680*	0.14959	0.000	-1.0495	-0.3441
	B2	C2	-.88539*	0.22121	0.000	-1.4069	-0.3638
I can write clear, smoothly flowing, complex texts.		C1	-.43398*	0.12473	0.002	-0.728	-0.1399
I can write a critical overview of the relevant literature.	B2	C2	-.96775*	0.21999	0.000	-1.4864	-0.4491
		C1	-.45130*	0.12404	0.001	-0.7437	-0.1589
I can write a publishable paper on an empirical study I designed and implemented.	B2	C2	-.82556*	0.22604	0.001	-1.3585	-0.2927
		C1	-.40001*	0.12745	0.005	-0.7005	-0.0995
paraphrasing texts	B2	C2	-1.01943*	0.24821	0.000	-1.6046	-0.4342
		C1	-.71692*	0.13995	0.000	-1.0469	-0.387
citing and referencing sources	C2	C1	.51567*	0.21722	0.048	0.0036	1.0278
	B2	C2	-.83294*	0.21707	0.000	-1.3447	-0.3212
		C1	-.31727*	0.12239	0.027	-0.6058	-0.0287
organizing paragraphs	B2	C2	-.84499*	0.22345	0.001	-1.3718	-0.3182
		C1	-.46176*	0.12599	0.001	-0.7588	-0.1647
grammar	B2	C2	-1.07032*	0.23617	0.000	-1.6271	-0.5135
		C1	-.70041*	0.13316	0.000	-1.0144	-0.3865
special vocabulary	B2	C2	-.88267*	0.23864	0.001	-1.4453	-0.32
		C1	-.60603*	0.13456	0.000	-0.9233	-0.2888
writing paragraphs	B2	C2	-.74864*	0.23741	0.005	-1.3084	-0.1889
		C1	-.53861*	0.13386	0.000	-0.8542	-0.223
presenting ideas logically	B2	C2	-.72300*	0.21563	0.003	-1.2314	-0.2146
		C1	-.46124*	0.12158	0.001	-0.7479	-0.1746
stating problems clearly	B2	C2	-.90482*	0.20864	0.000	-1.3967	-0.4129
		C1	-.43538*	0.11764	0.001	-0.7127	-0.158

summarizing key points	B2	C2	-.73699*	0.21462	0.002	-1.243	-0.231
		C1	-.47053*	0.12101	0.000	-0.7558	-0.1852
drawing conclusions	B2	C2	-.70591*	0.22539	0.005	-1.2373	-0.1745
		C1	-.47863*	0.12708	0.001	-0.7782	-0.179
being critical	B2	C2	-.78866*	0.22971	0.002	-1.3302	-0.2471
		C1	-.47753*	0.12952	0.001	-0.7829	-0.1722
using guidelines like APA or MLA	B2	C2	-.81080*	0.27343	0.009	-1.4554	-0.1662
		C1	-0.33274	0.15417	0.081	-0.6962	0.0307

*. The mean difference is significant at the 0.05 level.