

**Exploring Artificial Intelligence as a Literacy Practice: Graduate Students'  
Navigation of AI and Academic Writing**

Zhanel Zakirova

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In

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53 Kabanbay Batyr Ave.  
Nur-Sultan 010000  
Republic of Kazakhstan  
Date: 15 of **October** 2023

Dear Zhanel Zakirova

This letter now confirms that your research project titled **Exploring Artificial Intelligence as a Social and Literacies Practice: Graduate Students' Academic Writing Experiences** has been approved by the Graduate School of Education Ethics Committee of Nazarbayev University.

You may proceed with contacting your preferred research site and commencing your participant recruitment strategy.

Yours sincerely,

Michelle Bedeker

**On behalf of:**

Dr Syed Abdul Manan, *PhD*  
Chair, GSE Ethics Committee  
Graduate School of Education  
Nazarbayev University  
Block C3  
Office: +7(7172)6016  
Mobile: +77079240053  
Email: [syed.manan@nu.edu.kz](mailto:syed.manan@nu.edu.kz) or [gse.irec@nu.edu.kz](mailto:gse.irec@nu.edu.kz)

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## **Abstract**

### **Exploring Artificial Intelligence as a Literacy Practice: Graduate Students'**

#### **Navigation of AI and Academic Writing**

Recent advancements in artificial intelligence (AI) writing technologies, including writing evaluation, feedback, translation, and text generation tools, have revolutionized existing literacy practices in higher education. Although numerous studies have been conducted to investigate AI in academic writing, they are mostly underpinned by a skills-based literacy approach or view AI as a threat to the student work's authenticity, disregarding the potential role of writing with AI as a literacy event that shapes students' literacy practices. Therefore, this qualitative case study aims to explore how AI-based writing assistants can shape the literacy practices of graduate students at one university with an English medium of instruction in Kazakhstan and the implications of this for their academic writing. Data were gathered from eight participants through focus groups, qualitative questionnaires, and arts-based research instruments, namely 'significant circles' and image cards. Thematic analysis was used for data analysis. Drawing on the literacy as a social practice approach (Barton & Hamilton, 1998; Hamilton, 2010; Street, 1984) and the Framework for Information Literacy for Higher Education (ACRL, 2016), the study found that students' positive perspectives were related to AI's help with language mechanics (skill-based literacies) and providing access to scholarly discourses (academic socialization). Moreover, AI fostered ethical scholarship and shaped scholarly identities as students faced challenges of AI, including unreliability, overcorrection, and overreliance. Participants used AI because it offered them a space to navigate social and institutional literacy practices to be ethical scholars, write scholarly, and foster their scholarly identities and voices. Finally, graduate students' use of AI in academic writing could best be understood as a set of institutional social practices where AI allowed them to mediate scholarly

expectations and develop writer identities valued by tertiary institutions. The results of this research will enhance teachers' and policymakers' comprehension of how students utilize AI in academic writing and offer implications for teaching writing at universities.

*Keywords:* artificial intelligence, academic writing in English, literacy as a social practice.

## Аңдатпа

### Жасанды Интеллектті Сауаттылық Практикасы Ретінде Зерттеу:

#### Магистранттардың ЖИ мен Академиялық Жазуда Бағдар Алуы

Жасанды интеллектке (ЖИ) негізделген жазу технологиясындағы соңғы жетістіктер жоғары оқу орындарында сауаттылықты оқытудың қолданыстағы тәжірибесін айтарлықтай өзгертті. Бұл жетістіктер қатарында жазуды бағалайтын және кері байланыс беретін, аударма жасайтын және мәтін жазатын құралдарды атап өтуге болады. Академиялық жазудағы ЖИ мүмкіндіктерін зерттеу мақсатында көптеген зерттеу жүргізілгенімен, олардың көпшілігі сауаттылықты дербес дағдылар жиынтығы ретінде тұжырымдайды немесе ЖИ-ді студенттік жұмыстың шынайылығына қауіп төндіретін құрал ретінде қарастырады. Бұл ЖИ-ді жазуда қолданудың студенттердің сауаттылық практикасын қалыптастыратын сауаттылық шарасы ретіндегі әлеуетті рөлінің ескерілмеуіне әкеледі. Осылайша, кейс-стади әдісіне негізделген бұл сапалы зерттеу ЖИ-ге негізделген жазу құралдарының Қазақстанның ағылшын тілінде оқытатын бір университетіндегі магистранттардың сауаттылық практикасын қалай қалыптастыра алатынын және олардың академиялық жазуына қалай әсер ететіндігін зерттеуге бағытталған. Деректер сегіз қатысушыдан фокус-топтар, сапалы сауалнамалар, және өнерге негізделген зерттеу құралдары, атап айтқанда “маңыздылық шеңберлері” және сурет карталары арқылы жиналды. Деректерді талдау үшін тақырыптық талдау әдісі қолданылды. Бұл зерттеу жұмысы сауаттылықты әлеуметтік практика ретінде қарастырып (Бартон & Гамильтон, 1998; Гамильтон, 2010; Стрит, 1984), жоғары білім берудегі ақпараттық сауаттылықтың негіздемелік нормаларына (ККҒЗҚ, 2016) сүйенеді. Нәтижесінде, студенттердің ЖИ-ге деген оң көзқарасы ЖИ-дің тіл механикасымен көмегі (дербес сауаттылық дағдылары) және ғылыми дискурстарға қол жеткізуге мүмкіндік беруімен

(академиялық әлеуметтендіру) байланысты екені анықталды. Сонымен қатар, студенттер ЖИ-ді қолдана отырып күмәнді сапа, шамадан тыс түзету және тәуелді болып қалу қаупі сияқты қиындықтарға тап болды. Нәтижесінде, ЖИ-дің ғылыми этиканы дамытып, ғылыми тұлғалылықты қалыптастырудағы рөлі анықталды. Қатысушылардың ЖИ қолдану себебі — ЖИ студенттерге әлеуметтік және институционалдық сауаттылық практикаларында жөн тауып, этикалық ғалым болу, ғылыми мәнерде жазу, және өздерінің ғылыми тұлғасы мен дауысын дамытуға мүмкіндік берді. Сонымен, магистранттардың академиялық жазуда ЖИ қолдануын институционалдық әлеуметтік практикалардың жиынтығы ретінде қарастыруға болады. Мұнда ЖИ студенттерге өздеріне артылған академиялық үміттерді ақтауға және жоғары оқу орындарында бағаланатын жазушы тұлғасын дамытуға мүмкіндік береді. Бұл зерттеудің нәтижелері оқытушылар мен білім беру саясатын анықтаушы тұлғаларға студенттердің академиялық жазуда ЖИ-ді қалай қолданатынын тереңірек түсінуге көмектесіп, университет деңгейінде жазуды оқыту бойынша ұсыныстарға негіз бола алады.

*Түйінді сөздер:* жасанды интеллект, ағылшын тіліндегі академиялық жазу, сауаттылық әлеуметтік практика ретінде.

## Аннотация

### **Изучение Искусственного Интеллекта в Качестве Социальной Практики: Как Магистранты Ориентируются в Искусственном Интеллекте и Академическом**

#### **Письме**

Недавние достижения в области технологий для письма, основанных на искусственном интеллекте (ИИ), включая инструменты для оценки письменной речи, обратной связи, перевода и генерации текста, значительно изменили существующую практику обучения грамоте в высших учебных заведениях. Несмотря на то, что многочисленные исследования были проведены с целью изучения возможностей ИИ в академическом письме, большинство из них основаны на концептуализации грамотности как совокупности навыков или на предвзятом отношении к ИИ как к угрозе аутентичности студенческих работ, что привело к игнорированию потенциальной роли письма с ИИ как мероприятия по повышению грамотности, формирующего практику грамотности у студентов. Таким образом, данное качественное исследование, основанное на методе кейс-стади, направлено на изучение того, как инструменты для письма основанные на ИИ могут формировать практику грамотности у магистрантов одного из англоязычных университетов Казахстана и как это влияет на их академическое письмо. Данные были собраны у восьми участников с помощью фокус-групп, качественных опросов и исследовательских инструментов, основанных на искусстве, а именно “Кругов Значимости” и карточек с изображениями. Данные были проанализированы с помощью тематического анализа. Опираясь на подход к грамотности как социальной практике (Бартон & Гамильтон, 1998; Гамильтон, 2010; Стрит, 1984) и нормы для информационной грамотности для высшего образования (АБКНИ, 2016), исследование выявило, что положительное отношение студентов к ИИ было связано

с его помощью с языковой механикой (грамотность как совокупность навыков) и предоставлением доступа к научным дискурсам (академическая социализация). Более того, ИИ способствовал развитию этичности в науке и формированию научной идентичности, поскольку студенты сталкивались с проблемами, связанными с ИИ, включая ненадежность, чрезмерную корректировку и потенциальную зависимость студентов от этих инструментов. Участники использовали ИИ, так как он предоставлял студентам возможность ориентироваться в социальных и институциональных практиках грамотности, чтобы стать этичными учеными, писать в научной манере, и развивать свою собственную научную идентичность и голос. Наконец, использование магистрантами инструментов ИИ в академическом письме стоит рассматривать как совокупность институциональных социальных практик, в которых ИИ позволяет им опосредовать академические ожидания и развивать идентичность писателя, которая ценится в высших учебных заведениях. Результаты данного исследования помогут преподавателям и лицам определяющим образовательную политику лучше понять, как студенты используют ИИ в процессе письма и послужат основой для рекомендаций по преподаванию письменной речи в университетах.

*Ключевые слова:* искусственный интеллект, академическое письмо на английском языке, грамотность как социальная практика.

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## Chapter 1: Introduction

In the modern era, the ongoing progression of artificial intelligence (AI) and broader technological innovations is steadily molding various aspects of our daily lives and contemporary society, spanning culture, economics, and politics. Notably, virtual assistants such as Alexa and Siri have become widespread, managing smart devices and aiding in diverse tasks. Moreover, the expanding digitalization of industry, encompassing technologies like the Internet of Things, large-scale data analytics, cloud manufacturing, and 3D printing, holds the promise of transforming manufacturing into an integrated cyber-physical system. Thus, manufacturing, digital technology, and the internet converge seamlessly into a unified entity (Gehlot et al., 2021). Moreover, technological advancements and AI have notably influenced education, particularly in language teaching, where intelligent role tutoring systems provide personalized feedback and AI-based assessments automate scoring, enhancing accessibility and effectiveness (Godwin-Jones, 2022).

More specifically, AI has significantly changed university students' learning practices, particularly in writing. AI-based writing assistants encompass a range of AI-fueled technologies, including software, applications, and programs that can scaffold students' writing. In this way, the utilization of AI-based writing assistants can provide a comprehensive set of language support services such as machine translation, text generation (Dale & Viethen, 2021), and provision of corrective feedback (Godwin-Jones, 2022). More recently, the emergence of ChatGPT has brought new opportunities for scaffolding student writing.

However, the ambiguous nature of ChatGPT has caused debates in academia because of its ability to produce texts in various genres in almost every subject area (Godwin-Jones, 2022). This has raised concerns that students might use it unethically and

even generate their entire assignments (Perkins, 2023). It is thus no surprise that there have been debates in universities about how AI can improve students' writing and concerns about academic integrity and ethics (Chan & Hu, 2023). Although there have been numerous studies on AI in academic writing, there is still a gap in understanding AI's effect on students' literacy practices. Therefore, more research is needed into how AI-based writing assistants can transform students' academic writing and other university literacy practices.

To sum up, the literature underscores the pressing need for universities to respond proactively to the implications of AI (Adams & Chuah, 2022; Chan & Hu, 2023; Godwin-Jones, 2022; Perkins, 2023). However, higher education studies have yet to thoroughly explore the ramifications of a society mediated by AI and probably need to reconsider the impact of AI on disciplinary discourses, knowledge practices, and other socio-cultural contextual conditions (Bearman et al., 2022). In addition, it is crucial to investigate how students use or incorporate AI into their academic writing and the potential it holds for shaping new scholarly and literacy practices. Guided by literacy as a social practice (LSP) framework, the present study explores how AI-based writing assistants can shape the literacy practices of graduate students at one university with English medium of instruction (EMI) in Kazakhstan and the implications for their academic writing.

### **1.1 Background and Context**

Among Central Asian countries, Kazakhstan is referred to as a pioneer in actively implementing the policy of trilingual education, a key component of the broader strategy of a New Kazakhstan in the New World, intending for Kazakhstan to merge into, engage, and build connections with the global community (Hajar & Mhamed, 2021; Tajik et al., 2022). Adopted in 2007, this policy calls on higher and secondary education institutions to adopt three languages to teach a wide range of subjects: "Kazak as the state language;

Russian as the regional language of post-Soviet countries; and English as the language of scientific and technological advancement and international cooperation” (Tajik et al., 2022, p. 2).

In 2010, Kazakhstan took a significant step towards internationalizing tertiary education by joining the European Higher Education Area and signing the Bologna Declaration, which supports students’ academic mobility. The same year, the government established Nazarbayev University, which has become internationally renowned, to improve the quality of higher education programs delivered in English. Currently, approximately 42 universities provide EMI programs and courses in Kazakhstan (Irsaliyev et al., 2017). However, research indicates that assimilation into Western academic discourse (Oliva-Girbau & Gubern, 2015) and academic writing in English is demanding for international and non-native English students (Campbell, 2019), especially graduate students, who are required to produce a thesis in English (Webster et al., 2000). As a result, the switch to EMI in Kazakhstan had considerable linguistic, cultural, and symbolic consequences for English as a foreign language (EFL) students (Hwami & Bedeker, 2024).

Kazakhstani researchers have revealed a link between EMI and students’ academic and linguistic experiences, offering some evidence of its impact on students’ difficulties with academic writing (Ablazimova, 2022; Batyrkhanova, 2020; Kuttubayeva, 2022; Myrzakulova, 2019; Tajik et al., 2022). For example, Ablazimova’s (2022) study of ten humanities undergraduate students showed that students encountered language, argumentation, and formatting difficulties. Similarly, Kuttubayeva’s (2022) study of eight undergraduate students’ academic and linguistic challenges revealed their struggles with English vocabulary, academic writing style, and cohesion. Both studies reported that students use online tools like Grammarly and Thesaurus to cope with writing challenges. Regarding graduate students, Batyrkhanova (2020) found that 11 social science graduate

students experienced academic challenges related to language skills (vocabulary, spelling) and literacy practices (source analysis and APA formatting). These challenges pushed them to draw on Grammarly and Google Translate with instructor assistance. Myrzakulova (2019) identified writing anxiety among 250 graduate students due to their limited vocabulary and paraphrasing skills, alongside struggles in expressing ideas concisely. Finally, Tajik et al. (2022) examined the academic challenges of 320 graduate students at ten EMI universities. They found that language and institutional norms, including referencing and paraphrasing, impacted academic success. Overall, while these studies reveal the link between EMI, language proficiency, and academic writing, they have overlooked the effectiveness of university support for writing development in EMI settings.

Although some studies on AI writing assistants show that students use AI to cope with academic writing difficulties, they are merely pointing out study skills or technical literacy, such as academic vocabulary and grammar, without considering literacy as a social practice (Ablazimova, 2022; Kuttubayeva, 2022). This suggests that, despite the growing interest in Kazakhstani EMI students' experience with academic writing, the LSP perspective seems to be underexplored. Research has shown that ignoring the social, situational, and cultural conditions that shape academic writing tends to frame students as having an English language or learning deficit, ignoring that they are "struggling to learn how to write within multiple learning contexts" (Mitchell & Evison, 2006; Murray, 2015, as cited in Davenport, 2022, p. 1). To address this gap, the present study will adopt the LSP perspective to explore the literacy practices that Kazakhstani graduate students engage in when using AI-based writing assistants in their academic writing (Barton & Hamilton, 2000; Street, 2017). In addition, I will consider AI-mediated literacy practices rather than focusing on one particular AI tool because, in a world where one technology is

being quickly replaced by another, it is essential to have a “critical methodology with which to explore future environments for learning” (Lea & Jones, 2011, p. 391).

## **1.2 Problem Statement**

In Kazakhstan, writing anxiety is prevalent among students, particularly among those using English as a foreign language, often due to academic writing challenges associated with insufficient vocabulary, writing mechanics, and understanding of social practices such as paraphrasing and formatting (Kuttubayeva, 2022; Myrzakulova, 2019; Tajik et al., 2022). As technology advances, “native” and “non-native” English speakers’ academic writing challenges (Campbell, 2019) result in students turning to AI-based writing assistants for support. Recent research indicates that students have shifted towards tools such as Grammarly and Google Translate (Ablazimova, 2022; Batyrkhanova, 2020). However, the potential of AI to beneficially shape students’ academic literacies is currently limited by the prevailing belief that AI use amounts to cheating, especially with generative AI like ChatGPT (Perkins, 2023). Hence, in the present study, I advocate for a deeper understanding of how students engage with AI tools, acknowledging students’ academic writing as something that learners do rather than produce (Bhagat & O’Neill, 2011). Specifically, there is a literature gap regarding how AI can shape the academic writing practices of Kazakhstani students at EMI universities. Therefore, further exploration into the influence of AI on students’ academic writing from a social practice perspective is necessary, particularly regarding its potential assistance in facilitating students’ navigation of literacy practices within specific cultural and contextual settings.

## **1.3 Purpose of the Study**

The present study addresses graduate students’ academic writing in light of the emerging function of AI use as a literacy practice. There is a shortage of in-depth research on AI, especially generative AI, as literacy practices (Alharbi, 2023; Perkins, 2023).

Hence, the present qualitative study aims to explore how AI-based writing assistants shape the literacy practices of graduate students at one Kazakhstani EMI university and the implications of this for their academic writing.

#### **1.4 Research Questions**

Main RQ: What literacy practices emerge when AI-based writing assistants inform graduate students' academic writing at one Kazakhstani EMI university?

Sub-question 1: What are students' perspectives and experiences of using AI for academic writing?

Sub-question 2: Why do students use AI-based writing assistants in writing?

#### **1.5 Significance of the Study**

The present study and its results can make a significant contribution to policy, theory, and practice. Regarding its significance for policy, the results can inform university policymakers on how students use AI writing assistants and how to ensure their ethical use. Regarding the theoretical importance, the present study's findings might be helpful for researchers in the field of new literacies, social practices, and academic writing because it can contribute to and potentially extend scholars' understanding of how AI can be conceptualized as a literacy event and literacy practice. Moreover, there seems to be a lack of research from a social practice perspective that examines AI-informed academic writing as a literacy practice in university contexts. Thus, this study can lay the groundwork for future investigations into Kazakhstani students' use of AI-based writing assistants as a social and literacy practice.

The methodological significance of the present study lies in its use of arts-based research methods, such as significant circles and image-based cards, allowing the participants to shape the research narrative with their expertise and experiences, thereby enriching the study with diverse insights beyond traditional approaches and potentially

shifting power dynamics between the researcher and the researched (Eisner, 2008; Greenwood, 2019; Leavy, 2020).

Finally, the study has practical significance for university teachers, administrators, and higher education institutions because its results can illustrate how AI functions as a contextual and cultural tool to mediate and scaffold academic literacy practices. Thus, it has pedagogical significance because faculty can reimagine their course design to address the potential challenges of writing with AI, support students in coping with them, and create a community of practice associated with engaging with AI ethically, ensuring the responsible use of AI in writing.

### **1.6 Definition of Key Terms**

It is essential to build a foundation of the main terms in the present study to ensure a thorough comprehension of the concepts covered in the current dissertation. These terms underpin the study's investigation of AI-based writing assistants as a literacy practice. The following section provides definitions and explanations of these terms and lays the foundation for an explicit and informed discussion.

#### ***AI-Based Writing Assistants***

AI refers to a type of technology that can think like humans. That is, it can understand information, make decisions, and learn independently by processing new information and learning from experience (Borchardt et al., 1994, as cited in Dodigovic, 2007; Kikalishvili, 2023; Popenici & Kerr, 2017; Zini, 2005). AI-based writing assistants are AI tools that help people write by offering writing evaluation and feedback, translations, and even by generating citations and entire texts (Dale & Viethen, 2021). In the present study, AI writing assistants refer to tools like ChatGPT, Grammarly, QuillBot, Bard, Scribbr, Typeset, and ChatPDF.

#### ***Generative AI***

Generative AI refers to a type of AI tools that can write new texts that are similar to human-written texts. These tools can quickly analyze existing data and produce original, creative, and high-quality content such as texts, music, and images in response to a user's instruction (Crawford et al., 2023; Dasborough, 2023). Currently well-known generative AI assistants include ChatGPT, Dall-E, and Bard.

### ***Literacy as Social Practice***

The present study draws on a social practice approach to define literacy. This approach combines skills and socialization approaches in literacy development in broader sociocultural contexts, such as how people participate in reading and writing in everyday situations, work, or educational contexts (Barton, 2001; Barton & Hamilton, 2000; Hamilton, 2010; Perry, 2012; Street, 1984).

### ***Literacy Events and Practices***

A social practice approach involves literacy events and literacy practices. An example of a literacy event is when a student presents their research paper at a seminar, while a literacy practice refers to how they wrote the paper, including how they selected the information, organized it, and cited sources, and the language they used to express their ideas (Barton, 2001; Barton & Hamilton, 2000; Hamilton, 2010; Perry, 2012; Street, 1984).

### ***Skills-Based Academic Writing***

The study skills model of academic writing considers writing in terms of individual cognitive abilities, like spelling and grammar. It is focused on the surface characteristics of the text and assumes that students are capable of applying the knowledge of writing that they learned in a particular context to other contexts without any difficulties (Lea & Street, 2006).

### ***Academic Socialization Approach to Academic Writing***

Academic socialization presents another approach to academic writing. Academic socialization involves teaching students the typical ways of thinking and writing within their specific disciplinary contexts, which are highly contextualized. Students are required to understand and produce various academic genres, such as research articles, essays, reports, and presentations (Kemp, 2007; Zarykbay & Bedeker, in press; Zholasbekova & Bedeker, in press). However, this approach implies that the genres and discourses in various disciplines are mostly stable, so that once learners have grasped the fundamental principles of a certain academic discourse, they can replicate it without any difficulties (Lea & Street, 2006).

### ***Academic Literacies Approach to Academic Writing***

A third approach to academic writing is academic literacy (Lea & Street, 2006), which includes and expands the skills-based and academic socialization approaches. This approach examines how power dynamics and personal identities influence language in academic communities, critically examining the social and cultural dimensions of academic writing (Lea & Street, 1998, as cited in Russell et al., 2009). For instance, students examine various disciplinary writing approaches and how power dynamics shape language and communication in academic communities.

### ***Discourses of Writing***

Discourses include specific norms and conventions about writing within specific contexts. Ivanič defines discourses as “beliefs about writing, learning to write, ways of talking about writing, and the sorts of approaches to teaching and assessment which are likely to be associated with these beliefs” (Ivanič, 2004, p. 224).

### ***Writer Identities***

The concept of writer identities refers to the multiple identities that writers construct for themselves based on what they say in their texts and the discourses they

engage in to express it (Ivanič, 1994). Writer identities includes their sense of self and the impression they leave on their readers. Writer identities are not a matter of the writer's free choice but depend on a more limited set of alternative discourses for identity construction available in a particular context. Hence, the writer's identity emerges from the text that was written and partially depends on the writer, partially on the reader, and partially on the socio-cultural environment that encourages participating in certain discourses (Ivanič, 1994).

### **1.7 Outline of the Study**

The present thesis is structured across six chapters. This Introduction Chapter has offered background information on the topic under exploration and outlined the problem statement, purpose of the study, research questions, and significance of the present research. The second chapter, the Literature Review, reviews previous studies on academic writing, AI, and the benefits and challenges of writing with AI. The third chapter, Methodology, introduces the research design, site, sampling, data collection tools (focus group interviews, questionnaires, and arts-based research tools), procedures used to analyze the data, and ethical considerations. Chapter Four provides the findings of the present research, followed by Chapter Five, which discusses the findings. The last chapter concludes the present thesis by providing a summary of the study, its limitations, and recommendations for future studies.

## **Chapter 2: Literature Review**

The study explores how AI-based writing assistants can shape the literacy practices of graduate students at one Kazakhstani EMI university and their implications for their academic writing. The preceding chapter introduced the study by providing the context and background about the growing prominence of English in Kazakhstan, its challenges for students at EMI universities, the questions that guide this study, and its significance. This chapter provides the theoretical foundation for the research, structured into five main sections: 1) an exploration of AI and its development; 2) a review of the opportunities and challenges of AI assistants in education and language acquisition; 3) a review of academic writing practices and their development; 4) an examination of empirical studies on AI-assisted writing; 5) the theoretical framework of literacy as a social practice; and 6) a summary of the chapter.

### **2.1 Introduction**

Crawford et al. (2023) argue that advances in neural networks, machine learning, and big data have opened a new chapter in the 70-year history of AI. In particular, OpenAI recently designed ChatGPT (Chat Generative Pre-Trained Transformer), a large language model chatbot, and made it publicly available in November 2022 (Lund et al., 2023). The emergence of ChatGPT has made the topic of AI a hot trend (Arif et al., 2023) because it uses a pre-trained model derived from an extensive data corpus to generate suggestions based on the users' prompts (Crawford et al., 2023). With its widespread adoption, ChatGPT has been recognized as a "disruptive" innovation that can potentially revolutionize the functioning of society and various fields, such as customer care, services, commerce, and education (Aydın & Karaarslan, 2023; Kasneci et al., 2023; Van Dis et al., 2023). These recent advancements and expansion in machine learning have facilitated the creation of sophisticated digital content with the potential to support education, making

researchers and educators increasingly curious about AI's possibilities in education (Yasmin & Mazhar, 2022).

AI has impacted education significantly, with over 30 countries introducing national AI policy strategies since 2021 to address social and ethical concerns (Schiff, 2022). The rationale is that AI can transform education, instruction, and learning (Yasmin & Mazhar, 2022). However, the integration of AI into the educational sphere is not a recent phenomenon. The first intelligent tutoring systems and computer assisted instruction systems were developed in the 1960s and 1970s. This led to the establishment of AI in education as a scientific field in the 1980s, highlighted by the first issue of the *International Journal of Artificial Intelligence in Education* in 1989 and the establishment of the International AI in Education Society (IAIED) in 1993 (Alkhatlan & Kalita, 2018; Selwyn, 2019; Williamson & Eynon, 2020). Since then, the developments of AI educational tools have improved analytical capabilities for measuring learning and teaching, and recent AI tools offer increasing potential to transform and personalize the educational experience for students (Luckin et al., 2016).

Unsurprisingly, AI has become popular among teachers and students. AI enables teachers to reclaim their valuable time by automating tedious tasks (Yasmin & Mazhar, 2022), while students feel that AI increases their writing proficiency and promotes self-directed learning (Barrot, 2021). Furthermore, it can enhance students' engagement, provide better access to knowledge, adapt to individual requirements, and personalize students' experiences and learning processes (Karsenti et al., 2017). Students see AI's value for academic writing because AI-based writing assistants offer various features, such as identifying errors in grammar, mechanics, formatting, and synthesizing literature to improve students' writing while still preserving the writer's role in the process (Adams & Chuah, 2022). In particular, AI writing assistants provide real-time feedback (Godwin-

Jones, 2022) and establish an environment that enables students to reach a flow state in writing (Crawford et al., 2023).

Nevertheless, as with every tool, AI-based writing assistants have certain drawbacks that can hinder the writing process. Such drawbacks include possible invasions of privacy, questionable quality of outputs, the inability to perform complex tasks, cost, and issues with ethics and safety (Crawford et al., 2023; Kikalishvili, 2023; Lund et al., 2023; Perkins, 2023; Su & Yang, 2023). Moreover, teachers are concerned about the possibility of AI reducing the value of education (Su & Yang, 2023). In short, the development of AI in the educational sphere holds both potential advantages and disadvantages for teaching and learning processes.

## **2.2 Development and Conceptualization of Artificial Intelligence**

The evolution of Artificial Intelligence (AI) unfolded over several decades, commencing with the formal establishment of the field at the Dartmouth Conference in 1956, where foundational ideas were laid by visionaries like Alan Turing (Seale, 1980). McCarthy is acknowledged for introducing the term AI and defining it as “the science and engineering of making intelligent machines, especially intelligent computer programs [thus] using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable” (McCarthy, 1956, as cited in Rajaraman, 2014, p. 206). While AI was initially introduced in the 1950s with the advent of manually managed computers by McCarthy (McCarthy, 1956, as cited in Russell & Norvig, 2010), it was not until the late twentieth century, with the emergence of machine learning and neural networks, that AI gained widespread recognition as a substantial force that can enhance the overall standard of life (Abiodun et al., 2018). Since then, the AI field has experienced considerable growth; its history reflects a journey from theoretical concepts to

practical applications that seamlessly integrate into daily life, driving innovations across multiple disciplines and areas of study.

Today, the definition of AI encompasses machines that can simulate the behavior of intelligent creatures, including the ability to learn, understand, and self-correct (Borchardt et al., 1994, as cited in Dodigovic, 2007; Kikalishvili, 2023; Popenici & Kerr, 2017; Zini, 2005). It possesses a pivotal trait—self-learning, empowering systems to refine their judgments by assimilating new data and experiences (Mintz & Brodie, 2019). This is achieved through the application of machine learning and deep learning methods, mainly using artificial neural networks, enabling robots to handle increasingly complex tasks with human-like learning capabilities (Lu, 2019). Machine learning, which operates at the crossroads of statistics and computer science, plays a significant role in recent AI developments because it is adept at handling the ever-growing volume of data. It utilizes algorithms to identify patterns and conduct predictive analyses without explicit programming (Lund et al., 2023; Kulkarni et al., 2022). Consequently, machine learning constructs programs that autonomously learn from data, continuously enhancing AI's predictive capabilities (Jordan & Mitchell, 2015).

Another indispensable facet of AI is natural language processing, which enables computers to comprehend human speech (Kulkarni et al., 2022). Natural language processing encompasses the subcategories of natural language understanding and natural language generation. Natural language understanding focuses on interpreting human language by extracting valuable information from documents (Kang et al., 2020), while natural language generation crafts human-readable text using multimedia, graphical, and structured data inputs (McDonald, 2010). Ongoing advancements in AI and technology have infiltrated various aspects of modern society, shaping cultural, economic, and political realms. Continuous research has expanded the capabilities of these systems,

driving technological progress and illuminating AI's potential societal impact, prompting a reevaluation of their role and significance in education (Perkins, 2023; Su & Yang, 2023).

### **2.3 AI in Education: Possibilities and Pitfalls**

AI has already been extensively employed in education, transforming the core aspects of instruction and learning (Yasmin & Mazhar, 2022). According to Karsenti et al. (2017), using machine learning in education presents a chance to move beyond a standardized approach and build educational resources that adapt to individual requirements and capacities, personalizing learning. Yasmin and Mazhar (2022) claim that automation can assist both instructors and learners in making tedious responsibilities easier. For teachers, automation can offer automated grading software, saving precious time currently consumed by evaluating student assignments. It can also enhance the ease and engagement of certain learning activities for students, such as real-time language translation, which improves global access to knowledge. Thus, AI offers various pedagogical and administrative benefits to ensure the effective use of teachers' time, personalizing learning, increasing student engagement in learning activities, and can be used as AI writing assistants with teachers' guidance (Yasmin & Mazhar, 2022). In particular, AI can be effective in language teaching and writing instruction.

According to Yasmin and Mazhar (2022), AI can be used in language teaching to generate innovative content, streamline task automation, organize tutoring, and ensure inclusive educational access for learners with special needs. Similarly, Pokrivčáková (2019) highlighted seven advantages of using AI in language instruction such as 1) providing personalized learning materials; 2) translating text or speech across languages; 3) correcting grammar with writing assistants; 4) conversing through chatbots; 5) developing intelligent platforms for language acquisition; 6) enabling tailored language instruction; and 7) crafting intelligent virtual reality tools for speaking practice. In short,

AI can function as intelligent assistants in language teaching, automating some question-and-answer (Q&A) assignments and offering students on-demand assistance without taking up precious teacher time (Yasmin & Mazhar, 2022).

Regarding writing instruction, in particular, AI-based writing assistance systems provide a notable advantage by offering a comprehensive array of support services, ranging from machine translation to sentence and paragraph generation (Dale & Viethen, 2021). According to Godwin-Jones (2022), four main types of AI tools help students facilitate their writing. First, machine translation tools offer students fast translations at no cost. Second, automated writing evaluation systems offer fast, consistent, and voluminous corrective feedback to a finished text and identify areas of improvement by keeping track of the revisions. Third, automated written corrective feedback tools offer real-time corrective feedback to a text when it is being composed. Finally, automated text-generating tools can produce texts in various genres in almost every subject area.

Overall, AI assistants offer various support features to develop language and writing skills while preserving the students' role in the process (Adams & Chuah, 2022). They enable writers to develop metacognitive knowledge of language learning and writing, offering a framework for deliberate practice and motivating students. Hence, Adams and Chuah (2022) argue that AI-based writing assistants have a dual purpose: to simplify the process of composing research texts and to improve the standard of critical evaluation, especially concerning language style and literature evaluation.

Given the potential benefits of AI tools in teaching and learning, there is growing interest in how students apply them in writing. Adams and Chuah (2022) conducted a comprehensive literature review on existing AI tools, their capabilities, and the potential future impact. They categorized publicly available AI-based writing tools into three groups: language and mechanics (e.g., Grammarly and QuillBot), synthesizing and

summarizing text (e.g., Scholarcy and Iris.ai), and typesetting and formatting tools (e.g., Typeset.io). Their findings indicate specific advantages of each software: Grammarly appeals to students for its grammar and vocabulary assistance; QuillBot provides additional features like summarization and paraphrasing; Scholarcy and Iris.ai offer efficient text summarization and synthesis, aiding students in managing their reading lists and identifying relevant literature; Typeset.io simplifies paper formatting based on various journal requirements, enhancing convenience for students. Thus, using AI assistants holds promise in improving academic writing among graduate students.

Despite AI's myriad benefits, research has also revealed several constraints and challenges of employing AI in education (Crawford et al., 2023; Kikalishvili, 2023; Lund et al., 2023; Perkins, 2023; Su & Yang, 2023). First, their free versions impose limitations and constraints on economically disadvantaged students who cannot afford the paid versions (Adams & Chuah, 2022; Godwin-Jones, 2022). Second, AI-based writing assistants, exemplified by ChatGPT, have technical limitations that have created significant issues, such as inefficiencies in handling academic writing tasks and insufficient personalization and issues with data quality (Kikalishvili, 2023; Su & Yang, 2023). Third, AI presents challenges for student learning, notably the risk of overreliance leading to cognitive offloading, which may hinder specialized knowledge development and undervalue education (Crawford et al., 2023; Perkins, 2023). Fourth, AI might be less helpful for students with lower levels of English proficiency because they might not understand AI's suggestions or assess their reliability without their writing instructors' help (Fan, 2023; O'Neill & Russell, 2019). Fifth, Fyfe (2022) found inconsistencies in student citations, including fabricated information, which highlights the potential for inadvertent plagiarism when using large language models (LLMs) (Perkins, 2023; Su & Yang, 2023). Thus, challenges arise when LLM use is not transparent, and outputs undergo

editing, alteration, or serve for initial idea formation (Perkins, 2023). In grappling with such challenges, higher education institutions are now urged to reconsider academic integrity policies to include the ethical utilization of AI assistants (Crawford et al., 2023; Perkins, 2023).

Overall, AI has significantly transformed education by personalizing learning and automating tedious tasks, thereby enhancing the experiences of both teachers and learners. It is particularly beneficial in writing instruction, offering translations, corrective writing evaluation and feedback, and generating texts. However, AI also has challenges like limited functionality of free versions, technical limitations, and potential overreliance, which highlights the necessity to reassess the academic writing foundations and practices in the AI era.

#### **2.4 Academic Writing Practices**

Reflecting its importance for university students' assignments and tasks, academic writing has been largely explored in language learning (Badley, 2009; Bailey, 2014; Leki, 1998; Peters, 2008; Zemach & Rumisek, 2005). In the early 1970s, researchers viewed academic writing as mastering decontextualized linguistic elements, such as lexical and grammatical knowledge (Bruce, 2008; Coffin et al., 2005; Mckenna, 2010). Since then, academic writing has evolved into a prominent element of instruction and learning in various subjects in tertiary education (Strobl et al., 2019). Milson-Whyte (2015) contends that academic writing demands intricate grammar and a structured framework, necessitating the instruction of specific skills, such as formal tone, organized idea presentation, and limited use of dialogue. Similarly, Johnson (2016) argues that it conveys information and ideas efficiently and objectively, which is often a challenge for undergraduate and graduate-level assignment writing. Lea and Street (1998) labeled such views and approaches as skills-based academic writing approaches prioritizing formal

grammar rules and basic sentence construction. These skills-based perspectives remain pertinent, as demonstrated in Wangdi's (2022) recent qualitative study on the perceptions of academic writing among 14 Bhutanese student-teachers. The study revealed that participants viewed academic writing as requiring conciseness, clarity, and grammatical accuracy, which were emphasized in skills-based academic writing approaches.

Biber and Gray (2010) expressed another view by highlighting the importance of academic writing aligning with the norms and standards of different disciplines and mirroring the scientific discourses researchers use to generate scholarly knowledge. Ivanič (2004) argues that such norms and conventions are discourses, which she defines as “constellations of beliefs about writing, beliefs about learning to write, ways of talking about writing, and the sorts of approaches to teaching and assessment which are likely to be associated with these beliefs” (p. 224). Thus, when students enter unfamiliar academic communities, they not only face the task of understanding academic content but also strive to master the discourses and practices inherent to that scholarly community (Morita, 2009). For this reason, there has been a switch from skills-based academic writing to academic socialization (Lea & Street, 2006).

Academic socialization involves teaching students the conventions and rules of writing within their specific disciplinary contexts. These are highly contextualized, requiring students to understand and produce various academic genres such as research articles, essays, reports, and presentations (Kemp, 2007; Zarykbay & Bedeker, in press; Zholasbekova & Bedeker, in press). Accordingly, academic socialization aims to develop students' ability to communicate effectively in their academic fields by analyzing and practicing genre-specific language, structure, and style. Although academic socialization extends the scope of academic writing compared to a skills-based approach, critics argue that it neglects to situate academic writing in its socially situated contexts, such as

institutional practices, power dynamics, students' backgrounds, and the role of their first language (L1) in meaning-making (Barton & Hamilton, 2000; Street, 1984).

These criticisms have led to the ideological model proposed by Lea and Street (1998), who argued for a shift from the traditional skills-based approaches, calling for academic writing to be recognized as a dynamic and socially embedded phenomenon (Barton, 2001; Ivanič, 2004; Street, 1984). The ideological model focuses on social and cultural practices, which include students' home or cultural literacy practices as integral components in navigating disciplinary discourse (McKenna, 2010). For example, Zhou et al. (2020) and Wu (2015) showed that there may be differences in teachers' and students' perceptions of good academic writing despite the expectation that they would naturally share the same view. Zhou et al. (2020), in their research on 41 Chinese freshman students, found that students experienced challenges with academic writing because they could not understand and meet their professors' expectations. More specifically, the students valued the richness of English vocabulary in writing, whereas the teachers' assessment was focused on higher-order aspects like synthesizing information. Similarly, in a study on 14 Chinese postgraduate students' experiences at British universities, Wu (2015) found that when writing essays, students experienced difficulties understanding the professor's expectations due to the lack of knowledge of the university's postgraduate-level writing practices. Hence, students expressed a desire to receive clearer articulation and transparency regarding evaluation criteria and outcome expectations.

Thus, the ideological view departs from conventional approaches that treat academic writing as an array of individual skills. Instead, it advocates for a social practice approach that encompasses the complex interplay between language, culture, and society. In particular, a social practice perspective emphasizes that academic writing occurs in a specific cultural and situational context (Lea & Street, 1998; Street, 1984).

The academic writing perspectives mentioned above are captured in Ivanič's (2004) extended framework, which includes six writing discourses that underpin the policy and practice of academic writing: "skills discourse, creativity discourse, process discourse, genre discourse, social practice discourse, and sociopolitical discourse" (p. 225). More specifically, the skills discourse emphasizes mastering decontextualized techniques of composing; creativity centers on the originality of expression; the process discourse highlights the writing stages and strategies throughout each stage; the genre discourse centers on field-specific conventions; the social practice discourse considers writing's embeddedness in social contexts; and the sociopolitical discourse explores writing's political and cultural dimensions (Ivanič, 2004). These perspectives can provide valuable insights into the discourses (skills, academic socialization, or academic literacies) that underpin students' AI integration in their academic writing practices.

Before delving into AI's role in academic writing, one more issue that should be discussed is the notion of writer identity. According to Ivanič (1994), a writer is positioned by the discourse(s) to which they turn to while writing. In the process of writing, numerous identities are crafted for them based not only on what they say but also on the discourses they participated in to express it. Ivanič (1994) stresses that the writer cannot freely choose their positionality; rather, they tend to choose identities from a readily accessible array of alternative discourses for identity construction. The discourses' availability is limited, and they are affected by the power relations in a certain community, with some discourses being more dominant and acceptable than others.

Thus, Ivanič delineated four facets of a writer's identity: "autobiographical self, discursal self, self-as-author, and possibilities for self-hood in the socio-cultural and institutional context" (1998, p. 23). The autobiographical self continuously changes and is related to the identity that writer brings with them into their writing, including their sense

of roots or their background, which is constructed by previous social and discursive interactions. The discursive self denotes the numerous and occasionally conflicting impressions that the writer projects of themselves in a certain written text, purposefully or unconsciously. It is formed by the text's discursive traits, which correspond to the values, convictions, and power dynamics in the socio-cultural environment where the text is written. Self-as-author is related to the voice as the writer's stance or degree to which the writer asserts their authority as the original author of the piece of writing. Lastly, according to Ivanič (1998), within every institutional environment, individuals will encounter a variety of socially accessible self-hood possibilities, with a few of them being given preference over others.

In summary, regardless of the academic writing perspective or the underlying discourse, the fundamental goal remains consistent: to communicate ideas effectively and persuade the intended audience, which may include teachers, professors, dissertation committees, and peers (Adams & Chuah, 2022). However, in EMI university contexts, EFL students need help mastering academic writing conventions, norms, and discourses (Campbell, 2019; Singh, 2019), and AI writing assistants can relieve the pressure to produce high-quality academic writing. Thus, it becomes imperative to explore AI integration as a social practice or situated literacy in students' academic writing practices (Street, 1984, 2017).

## **2.5 Academic Writing with AI: Skills or Social Practices**

AI-based writing assistants offer students multiple affordances that can significantly impact their writing processes. While numerous studies have examined the effectiveness of various AI-based writing tools, such as software that provides corrective feedback (Barrot, 2021; Ebadi et al., 2022), AI writing chatbots (Fan, 2023; Lin & Chang, 2020; Vázquez-Cano et al., 2021), and generative AI and their influence on students'

writing performance (Crawford et al., 2023; Kikalishvili, 2023; Lund et al., 2023; Su & Yang, 2023), there is a need to broaden the understanding beyond skills-based literacy of academic writing. While these studies show that AI tools enhance students' grammar, vocabulary, and sentence structure skills, they mostly ignore the intersection of AI technology and the social practices it supports in students' academic writing.

The existing literature suggests that the development of students' writing abilities can be enhanced by AI-based writing assistants. For example, Barrot's (2021) study with 65 first-year ESL students in the Philippines revealed significant improvements in writing accuracy for those receiving automated writing corrective feedback. Ebadi et al. (2022) found that Grammarly improved article use among 90 EFL students in an Iranian university, although the group that improved most received both teacher and Grammarly feedback. Similarly, O'Neill and Russell (2019) found that students were more satisfied when they received feedback from both Grammarly and academic learning centers, but the results also showed students' concerns about Grammarly's accuracy and technical glitches. In contrast, Fan (2023) challenged the positive impact of automated written corrective feedback tools, finding that even combining it with teacher feedback did not result in higher-quality writing for 67 EFL students in a Chinese university. Instead, Grammarly's English-only feedback hindered students' writing development. However, these studies did not go beyond conceptualizing academic writing as study skills and failed to report on the emerging literacy practices in students' use of automated written corrective feedback (Lea & Street, 1998).

Moreover, research studies revealed that AI-powered chatbots facilitate human-machine interactions through oral or written code, creating an engaging learning environment, fostering self-regulated learning, and enhancing writing quality (Fryer et al., 2019). For example, Vázquez-Cano et al. (2021) examined a chatbot's efficacy in

enhancing punctuation skills compared to traditional methods. The findings showed that students held positive views due to improved punctuation usage, particularly with commas, colons, and periods across various syntactic patterns. They also reported increased engagement and self-regulated learning, attributing it to the feedback and user-friendly mobility of the chatbots. Similarly, Lin and Chang (2020) conducted a mixed-methods study involving 357 students to investigate how a writing chatbot complemented their in-class instructions. The study revealed that participants recognized the chatbot's role in developing their thesis statements, clarifying instructional confusion, and improving the quality of peer feedback. These findings suggest that chatbots are valuable teaching tools that can enhance writing instruction and student engagement. Nonetheless, these studies are limited to considering chatbot's role in students' academic writing from a writing-as-a-set-of-decontextualized-skills point of view, omitting the broader social practices necessary for students' successful participation in disciplinary or discourse communities (Ivanič, 2004; Lea & Street, 1998).

Finally, generative AI, such as ChatGPT, is emerging as a valuable instrument for students, offering personalized writing assistance and enhancing their engagement in deeper learning strategies. It can act as a student assistant rather than a facilitator of dishonesty, requiring instructors to provide explicit role modeling in crafting prompts and analyzing outputs (Crawford et al., 2023). For example, Chan and Hu's (2023) study on students' perspectives on AI revealed multiple benefits of generative AI in writing, including brainstorming and editing assistance and help with searching, summarizing, and analyzing literature. Furthermore, Crawford et al. (2023) highlighted ChatGPT's role in fostering deeper learning environments, aiding students in achieving a flow state and assisting in essay planning, grammar checks, and content generation, concluding that ChatGPT can decrease student anxiety, motivate, and promote self-determination,

improving academic performance. Similarly, Su and Yang (2023) identified several potential advantages of ChatGPT, including envisioning a more individualized and engaging student learning experience and enhanced essay writing assistance. In addition, Lund et al. (2023) found that ChatGPT can simplify the citing and formatting processes to meet diverse journal requirements and potentially increase students' socialization into scholarly practices. Nevertheless, there is a significant gap in research on using generative AI in academic writing since most of these studies consider technical skills rather than viewing it as a new or emerging literacy practice. This narrow focus overlooks the wider socio-cultural contexts that mold academic writing, suggesting a need to explore academic writing with AI as situated literacy or social practices (Lea & Street, 1998).

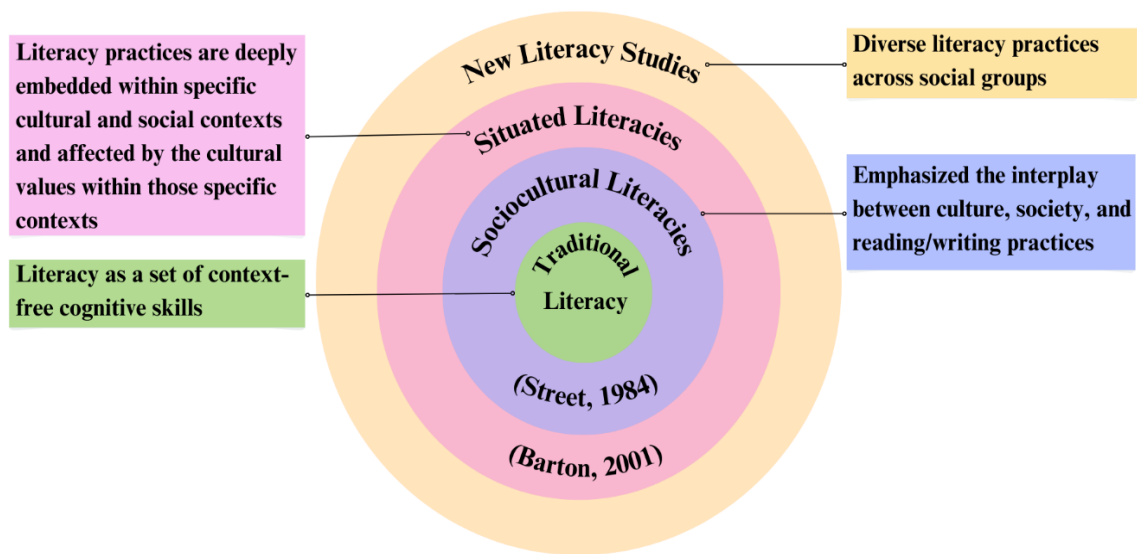
Overall, research revealed that AI tools like automated written corrective feedback tools, chatbots, and generative AI tools facilitate self-regulated learning and improve writing quality by providing personalized writing support. However, there is a need to explore AI's role beyond technical skills to include emerging literacy practices in students' academic writing.

## **2.6 Theoretical Considerations: Literacy as a Social Practice**

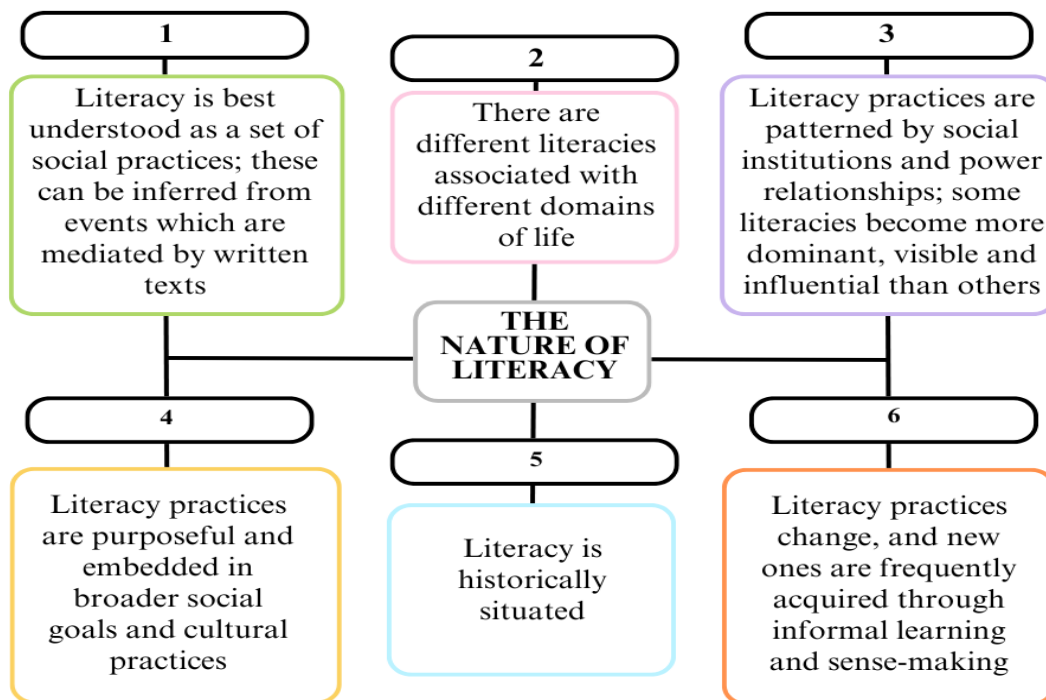
In traditional literacy models, literacy has often been considered as individual mastery of reading and writing, an array of discrete and context-independent skills like grammar and syntax, or essential reading comprehension. However, as societies evolved, scholars began to question the adequacy of these approaches in capturing the dynamic and situated nature of literacy in real-world contexts (Barton, 2001; Ivanič, 2004; Street, 1984). The conceptualization of literacy as a social practice (LSP) emerged during the 1990s in the UK as part of new literacy studies (Lillis & Scott, 2007). It reflects a paradigm shift from viewing literacy as a set of isolated skills to understanding its dynamic nature (Barton, 2001; Ivanič, 2004; Street, 1984). Pioneered by scholars like Street (1984), and

extended by Barton (2001), this paradigm shift recognizes literacy as dynamic and deeply embedded in sociocultural contexts.

This shift began when Street (1984) argued for a sociocultural approach to literacy and emphasized the interplay between culture, society, and reading/writing practices, challenging the notion of literacy as a neutral or technical skill (Figure 1). Then, Barton (2001) extended the social practice perspective by introducing the concept of situated literacies, emphasizing that literacy practices are deeply embedded within specific cultural and social contexts and highlighting the influence of cultural values on literacy practices within particular contexts. That is, students engage in the community of practices to progress from being beginners to full participants in the academic environment. In addition, new literacy studies researchers further reinforce the social practice perspective by focusing on ethnographic approaches to writing and diverse literacy practices across social groups (Lea & Street, 1998; Street, 2017). Researchers who conduct their investigations within the new literacy studies paradigm employ ethnographic, case study, and discourse analysis methods in exploring the complexities of literacy in various social, cultural, and political environments (Perry, 2012).

**Figure 1***Development of Literacy as a Social Practice*

These social practice perspectives offer a comprehensive understanding of literacy as socially embedded, extending beyond educational spaces to encompass daily life across heritage, culture, politics, civic engagement, history, religion, and the workplace. They have been instrumental in challenging traditional perspectives and ushering in a more nuanced understanding of literacy within diverse cultural and social contexts (Bhatt, 2023). This evolution has transformed academic discourse and influenced educational policies and practices, demonstrating the need for a holistic and context-sensitive approach to literacy. That is because, within the framework of LSP, literacy is intricately woven into local activities, making it challenging to isolate and define as a distinct and static entity (Hamilton, 2010). Barton and Hamilton (2000) provided a summary of the features of literacy in accordance with the new literacy studies perspective (Figure 2).

**Figure 2***Six Propositions About the Nature of Literacy*

*Note.* From *Situated Literacies: Reading and Writing in Context* (p. 8), by D. Barton, M. Hamilton & R. Ivanič, 2000, Routledge. Copyright 2000 by Routledge.

Thus, looking at literacy from the social practice perspective allows for multiple definitions of and purposes for literacy, diverse educational approaches, and varying objectives, thereby reflecting the importance of understanding different literacy discourses (Hamilton, 2010). West (2019) drew on new literacy studies to explore the mediation of literacy activities by the Internet in English language arts classes. The study involved two suburban school students and two urban school students, examining how students who had faced academic challenges perceived themselves as writers in the digital writing environment within literacy classes. The findings demonstrated the advantages and limitations of employing technology in writing, emphasizing the Internet's role as the central platform for literacy activities in English language arts classes. Students, in turn,

had to develop new literacies to fully engage with and benefit from the opportunities presented by Internet-mediated literacy practices.

Applying a social practices lens to students' writing at university, Lea and Street (1998) identified three key discourses shaping policy and practice for university students' academic writing: study skills, socialization, and academic literacies. They noted that the study skills discourse focuses on essential writing elements, believing that mastering grammar, syntax, and punctuation ensures academic writing proficiency. The academic socialization discourse stresses students' exposure to academic genres and language conventions within disciplines, including terminology, citation styles, and formal tone. Lastly, they advocate for an academic literacy approach that recognizes writing's broader context within institutional practices, power dynamics, and personal identities. For instance, students examine various disciplinary writing approaches and how power dynamics shape language and communication in academic communities.

Lea and Street (1998) suggest that while the three approaches to conceptualizing students' writing are not mutually exclusive, the academic literacies approach offers the most compelling insight. It examines how power dynamics and personal identities influence language in academic communities, critically examining the social and cultural dimensions of academic writing (Lea & Street, 1998, as cited in Russell et al., 2009). As AI writing assistants become integral to students' academic writing endeavors, it becomes imperative to examine their role through the LSP lens. This perspective allows for an exploration of how AI tools intersect with traditional writing strategies, paving the way for a more inclusive and AI-informed approach to students' social and literacy practices.

Two key concepts, literacy events and literacy practices, form the foundation of a social practice framework. Literacy events entail any situation or activity where written text is utilized within a social context, such as reading a newspaper, writing a letter, or

participating in a classroom discussion involving written materials. Literacy practices encompass not only the observable actions of reading and writing but also the implicit cultural norms, attitudes, and power dynamics that influence how individuals engage with written text in various settings (Barton & Hamilton, 2000; Heath, 1983, as cited in Hamilton, 2010). Therefore, literacy practices include observable behaviors and individuals' perceptions and emotions regarding these events (Barton & Hamilton, 2000; Hamilton, 2010). Similarly, Street (2017) defines literacy practices as part of the broader cultural concept, highlighting specific ways individuals read and write across diverse cultural settings. He emphasizes that while literacy events are visible, literacy practices entail a deeper analysis of meanings.

Differentiating between literacy events and literacy practices in higher education academic writing is crucial for understanding the multifaceted nature of academic writing as a social practice. An example in this context could be a student presenting a research paper during a seminar, showcasing the observable use of a written document for communication. On the other hand, literacy practices extend beyond these specific events to encompass the broader cultural and contextual dimensions of reading and writing. For instance, the widespread adoption of specific citation styles, like APA or MLA, represents a literacy practice in academic writing. This practice goes beyond merely citing (events) to include embedded cultural norms, expectations, and power dynamics within the academic community. Thus, understanding both literacy events and practices provides a comprehensive insight into the dynamics of literacy within the academic writing domain. As we continue into the 21st century, the LSP framework remains dynamic, constantly evolving to encompass the ever-changing connection between culture, society, and technology (Barton & Hamilton, 2000; Hamilton, 2010; Street, 2017).

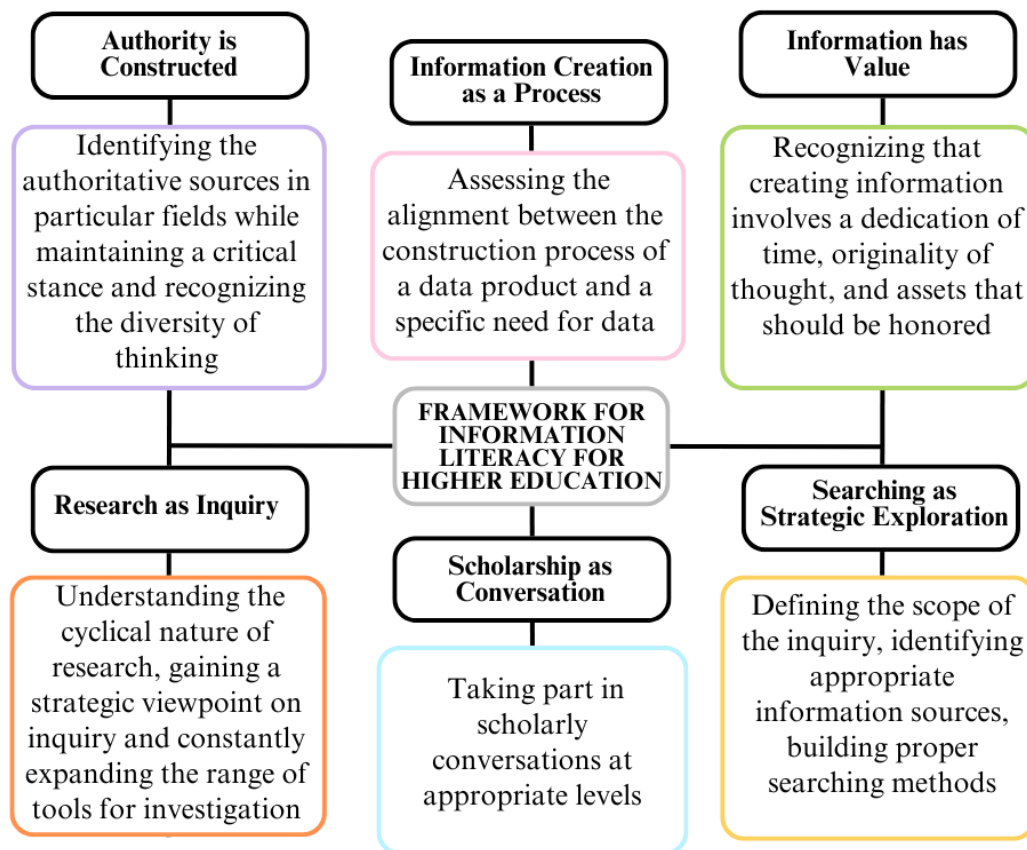
Overall, the literacy as social practice theory posits that literacy is constantly tied to particular socio-cultural contexts, power dynamics, and ideologies (Barton & Hamilton, 1998; Street, 1984). This framework identifies various discursive literacy practices based on the text and its intended objectives for reading and writing. Socially situated literacy is essentially literacy in action, and this perspective can offer insights into students' usage and experiences of using AI-based writing assistants. More importantly, students' writing with AI can be considered a literacy event, so their values and beliefs about AI affordances can reveal students' literacy practices when they engage in academic writing. Drawing from the literature review, the present qualitative study adopts the LSP perspective because I consider writing with AI as a literacy event and practice. For example, I conceptualize AI usage within academic writing as both a specific literacy event and an ongoing literacy practice. As a literacy event, it represents distinct instances where individuals employ AI to facilitate different writing tasks, such as brainstorming ideas or refining content. Simultaneously, the continuous integration of AI into the writing process forms a literacy practice, showing its routine use as a valuable tool for drafting, editing, and generating content. Thus, I use the LSP perspective to highlight AI's role in literacy and its potential to shape new literacy practices, particularly in academic writing. Using the LSP perspective signifies a transformative shift in how AI literacy practices can foster the development of skills in using AI tools, interpreting AI-generated content, and critically evaluating information, particularly in diverse cultural settings.

This study also adopts the framework for information literacy for higher education (FILHE) designed by the Association of College and Research Libraries (ACRL). The framework was developed to address the rapid changes in the higher education context caused by the dynamic and unpredictable information landscape in the modern world. These changes in the information landscape also impose greater responsibility on students

to build new knowledge, comprehend the evolving nature of information, employ information, and engage in scholarship in an ethical way. The association offers a framework of six frames that stand for six concepts integral to information literacy: “authority is constructed and contextual, information creation as a process, information has value, research as inquiry, scholarship as conversation, searching as strategic exploration” (ACRL, 2016, p. 8) (Figure 3).

**Figure 3**

*Six Frames of the Framework for Information Literacy for Higher Education*



*Note.* From *Framework for Information Literacy for Higher Education* (pp. 12-22), by the Association of College and Research Libraries, 2016. Copyright 2016 by the Association of College and Research Libraries.

Here, the “authority is constructed” frame involves the ability to identify the authoritative sources in particular fields while maintaining a critical stance towards the conventional ways of assigning authority and recognizing the diversity of thinking and viewpoints. The “information creation as a process” frame involves assessing the alignment between the construction process of a data product and a specific need for data. The “information has value” frame includes recognizing that creating information involves a dedication of time, originality of thought, and assets that should be honored by people who intend to employ this information material or use it as a foundation for their data products. The “research as inquiry” frame pertains to understanding the cyclical nature of research that involves gaining a strategic viewpoint on inquiry and constantly expanding the range of tools for investigation. The “scholarship as conversation” frame indicates that generating academic work involves engaging in a dialogue with the academic community and that, over time, the competing perspectives lead to the development of novel insights. Thus, students take part in scholarly conversations at appropriate levels, such as conferences, journal publications, or online communities. Finally, the “searching as strategic exploration” frame indicates an individual’s ability to define the scope of the inquiry, identify appropriate information sources, build proper searching methods, and employ tools to manage citations. This framework is adopted in the present study to explore how AI has affected students’ literacy practices and contributed to students’ information literacy (ACRL, 2016).

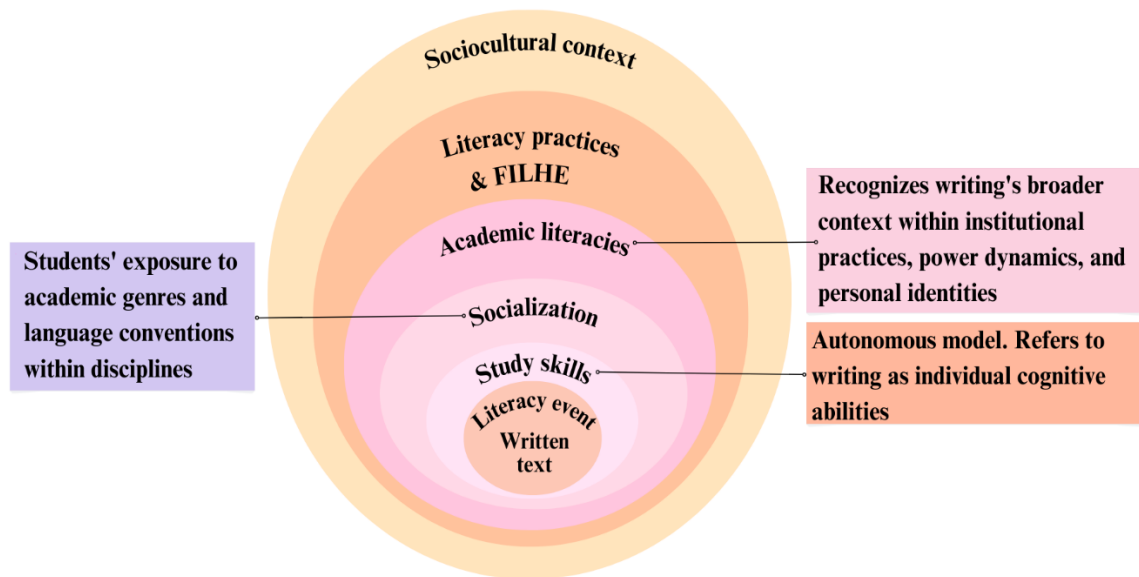
### ***Theoretical Framework***

Based on the theoretical considerations above, the concepts of literacy events, study skills, socialization, and literacy practices inform this study’s theoretical framework. For example, literacy events capture instances when students use AI, while study skills, socialization, and literacy practices are helpful in exploring how AI is affecting students’

literacies. In addition, information literacy frames and the concept of writer identities are used to investigate how AI is affecting students' information literacy and identity development (Figure 4).

#### Figure 4

##### *Theoretical Framework*



*Note.* Adapted from “Analyzing Literacy Practice: Grounded Theory to Model,” by V. Purcell-Gates, K. H. Perry and A. Briseño, 2011, *Research in the Teaching of English*, 45(4), p. 439. Copyright 2011 by the National Council of Teachers of English.

## 2.7 Summary and Conclusion

This chapter reviewed the research literature on AI and academic writing and presented the theoretical framework of literacy as a social practice that underpins this study. It began with discussing the development of AI assistants, continued examining its application in language learning and writing, and finally focused on academic writing approaches in higher education. The review revealed that various AI assistants have been extensively employed in education and can be generally classified as automated writing evaluation, automated written corrective feedback, machine translation, and automated text-generating tools. These AI assistants facilitate students' learning and research through

editing, summarizing, paraphrasing, typesetting, and formatting. The review also considered the constraints of AI tools, including issues with data quality, inefficiencies when applied to academic writing tasks, English-only feedback, a lack of adequate personalization, potential overreliance and cognitive offloading, and the associated costs. The studies indicated benefits of AI for academic writing, such as enhancing accuracy and quality of writing, helping with planning and editing, simplifying the process of citing and formatting, providing personalized feedback and saving time, clarifying instructional confusion, increasing engagement in learning, and building confidence. However, most studies on AI in academic writing focus only on the technical aspects of writing, suggesting a need to explore academic writing with AI as situated literacy practices and events to understand how it can contribute to developing new academic literacy practices. The next chapter of the present thesis explains the methodology employed to address the research questions.

### **Chapter 3: Methodology**

The study aims to explore how AI-based writing assistants can shape the literacy practices of graduate students at one Kazakhstani EMI university and their implications for their academic writing. The preceding chapter provided an overview of the literature on AI-based writing assistants, AI's role in education, academic writing practices, and the major benefits of AI use in academic writing. In addition, it provided a rationalization for the adoption of literacy as a social practice theory (Barton & Hamilton, 1998; Hamilton, 2010; Street, 1984) and the Framework for Information Literacy for Higher Education (ACRL, 2016) in the present study. This chapter describes the methodology for the present research and addresses the research purpose by presenting the following main research question and two sub-questions:

Main RQ: What literacy practices emerge when AI-based writing assistants inform graduate students' academic writing at one Kazakhstani EMI university?

Sub-question 1: What are students' perspectives and experiences of using AI for academic writing?

Sub-question 2: Why do students use AI-based writing assistants in writing?

This chapter is structured into six sections. Section 3.1 offers a rationale for employing a qualitative approach with a case study design. Section 3.2 elaborates on the rationale behind selecting the research instruments, including qualitative questionnaires, two arts-based research tools (significant circles and image cards), and focus group interviews. In Section 3.3, the sampling strategy is outlined, detailing sample selection criteria and the justification behind selecting the research site. Data collection procedures are delineated in Section 3.4, while Section 3.5 discusses data analysis tools. Lastly, Section 3.6 presents the ethical considerations, specifically anonymity, confidentiality, and the study-related risks and benefits.

### 3.1 Research Design

The present study employed a qualitative research approach to explore the potential of AI-based writing assistants to shape the literacy practices of graduate students in academic writing. I chose this approach because it can capture the participants' perspectives, interpretations, and the significance they assign to their personal experiences (Merriam & Tisdell, 2015; Yilmaz, 2013). In addition, the study's purpose was to understand how AI assistants can shape the literacy practices of graduate students and the implications of this for their academic writing; thus, the research design specifically drew on a case study approach because it requires an extensive analysis of a certain event or a "phenomenon of some sort in a bounded context" (Miles et al., 2014, p. 28). More specifically, a case study design was suitable because it can shed light on the growing interest in AI and emerging literacy practices since case studies are not merely methodological choices but "a choice of what is to be studied" (Stake, 2000, p. 435). Moreover, a case study involves collecting data in depth, requiring a number of data sources to provide a holistic description of the case and how case themes were developed, thus offering the reader a thorough understanding of the phenomenon (Creswell, 2013). Finally, case study researchers can include quantitative data, although their interest is not in statistics but in how or why to present "an extensive and 'in-depth' description of some social phenomenon" (Yin, 2018, p. 4). Thus, a case study design was well-suited for the present study because the researcher's influence over events was minimal, and the study focused on a current phenomenon situated within the real-world context of a specific group of graduate students to understand how or if AI-based writing assistants were shaping their literacy practices.

Although Yin (2018) argues that a case study is best suited when the researcher seeks to tackle 'how' and 'why' questions, the present study used 'what' questions along

with the ‘why’ question to guide the research. The decision to ask a ‘what’ question was justified because ‘what’ questions are used in case studies when the researcher’s intention is to understand the case (Merriam, 1998). Asking a ‘what’ question enabled me to understand the students’ perspectives and experiences to explore their literacy practices, which are individuals’ perceptions, beliefs, and emotions regarding literacy events (Barton & Hamilton, 2000; Hamilton, 2010).

In addition, Yin (2018) states that case studies are used when the researcher wishes to include contextual factors because they are pertinent to the phenomenon being investigated or there are no distinct boundaries between the phenomenon and its environment. In the present study, the adoption of the LSP perspective entailed greater attention to the socio-cultural context of the phenomenon as the social institutions and power relationships in a particular context shape the students’ literacy practices (Barton, 2001). Thus, a case study was used because the phenomenon was students’ literacy practices, and it was not possible to explore their practices without considering the context, which was one renowned autonomous EMI university in Kazakhstan. Thus, asking ‘what’ and ‘why’ questions in the present case study enabled me to explore the whole picture of a phenomenon in a broader, descriptive, and extensive way (Alam, 2021).

There are three major case study types: single intrinsic, single instrumental, and multiple case studies (Stake, 1995). Multiple case studies are sets of individual studies aiming to gain a complete picture of an issue; instrumental case studies examine a specific case to comprehend a larger problem or construct a theory and treat the case itself as a secondary interest; and intrinsic case studies enable one to understand the particular unique case under consideration (Stake, 1995). Hence, an intrinsic case study was the most appropriate design because my research did not aim to examine multiple cases or examine the case as a second interest. Instead, it focused on AI-based writing assistants as social

and literacy practices as the specific and unique phenomenon of a particular group of graduate students in a particular university.

### **3.2 Sampling and Research Site**

In case study designs, the research purpose guides the decisions about sampling. It involves selecting a specific group of cases or individuals from a larger population to study in depth, who will best help researchers understand and explore the particular phenomenon or context of interest (Yin, 2018). Thus, the focus is not on the quantity of participating individuals but rather on the depth of information and a “shared perception, belief, or behavior among a relatively homogeneous group” (Guest et al., 2006, p. 76). For this reason, this study employed a mix of convenience and purposive sampling to recruit approximately 8-12 participants. Initially, I used convenience sampling because the population was readily available, enabling me to deliberately select a sample of individuals who could best inform about the research phenomenon (Creswell & Poth, 2016). However, I also used purposive sampling to address the researcher bias in convenience sampling because purposive sampling requires criteria relevant to the focus of the study, aim, and research questions, and they could provide in-depth data on the topic (Cohen et al., 2018; Stake, 2000; Yin, 2018).

Therefore, the sampling decision aligns with the case study’s purpose: gaining a comprehensive understanding of the affordances of AI as a literacy practice rather than producing findings that can be generalized to a broader population (Ridder, 2017). In light of the study’s exploratory nature and purpose, I decided to select only graduate students because they had completed their bachelor’s degrees and had more significant experience with academic writing, and deeper familiarity with the norms and writing standards within academia. In addition, I selected students who spoke English at a high level because, according to the literature (Fan, 2023; O’Neill & Russell, 2019), language proficiency can

be an important factor in students' effective use of AI. As a result, the sample consisted of graduate students who fit the following selection criteria (Table 1):

**Table 1**

*Selection Criteria for the Participants*

| Selection criteria   |
|--|
| a) students using AI-based writing assistants                          |
| b) students who are Russian or Kazakh-dominant                         |
| c) students who have IELTS 6.5. or higher level of English proficiency |
| d) students enrolled at an EMI university                              |
| e) students registered in humanities and science graduate schools      |

For the present study, I recruited seven graduate students enrolled in humanities, education, or public policy majors and one student (P4) from a digital technology program at the selected EMI university. Most were Russian-dominant or spoke both Kazakh and Russian at the same level and English at an advanced level. The majority were somewhat or moderately confident in their academic writing skills, with only one participant being extremely confident (see Table 2 for more detailed profiles of the participants).

In case study designs, selecting the research site is an essential sampling step. It requires a consideration of its alignment with the research subject, accessibility, feasibility, potential for unobtrusive observation, and the likelihood of frequent occurrences of the phenomena under study (Creswell, 2013; Spradley, 1980, as cited in Savenye & Robinson, 2005). Given this case study's intention to explore AI in students' academic writing in English as a literacy practice, an EMI university research site is justified because it enabled me to gather rich data on this topic.

**Table 2***Participants' Demographic Information*

| Participant code | Age range | Type of university (previous degree) | Dominant language  | Confidence in using Kazakh | Confidence in using Russian | English proficiency  | Confidence in academic writing skills |
|------------------|-----------|--------------------------------------|--------------------|----------------------------|-----------------------------|----------------------|---------------------------------------|
| N1               | 20-30     | non-EMI                              | Russian            | Moderately confident       | Extremely confident         | C1-C2 (advanced)     | Somewhat confident                    |
| N2               | 20-30     | EMI                                  | Kazakh and Russian | Somewhat confident         | Somewhat confident          | C1-C2 (advanced)     | Extremely confident                   |
| N3               | 20-30     | non-EMI                              | Kazakh and Russian | Somewhat confident         | Extremely confident         | C1-C2 (advanced)     | Somewhat confident                    |
| N4               | 20-30     | EMI                                  | Kazakh             | Extremely confident        | Somewhat confident          | C1-C2 (advanced)     | Moderately confident                  |
| N5               | 20-30     | non-EMI                              | Russian            | Moderately confident       | Somewhat confident          | B1-B2 (intermediate) | Moderately confident                  |
| N6               | 30-40     | EMI                                  | Russian            | Moderately confident       | Extremely confident         | C1-C2 (advanced)     | Somewhat confident                    |
| N7               | 30-40     | non-EMI                              | Kazakh             | Extremely confident        | Extremely confident         | C1-C2 (advanced)     | Somewhat confident                    |
| N8               | 20-30     | non-EMI                              | Russian            | Extremely confident        | Extremely confident         | C1-C2 (advanced)     | Somewhat confident                    |

*Note.* The majority of the participants were from humanities, education, or public policy majors, except for P4, who was from a digital technology major.

The following criteria applied for site selection: a) an EMI university in Kazakhstan that requires International English Language Testing System (IELTS) as one of the entry requirements; b) offers both undergraduate and graduate programs; d) has a diverse group of Russian and Kazakh-dominant graduate students. One EMI university located in the central region of Kazakhstan met the selection criteria and was in line with the purpose of the present research. It is an autonomous university with seven schools offering undergraduate and graduate programs for students, most of whom are Russian or Kazakh-dominant, studying through English as the main language of instruction. In addition, the university consists of 70% international faculty, it has 1,600 graduate

students, and depending on the program to which they wish to be accepted, students need a minimum score of band 6.5 and higher in IELTS or have graduated from an EMI university for their previous degree. Furthermore, the university is highly selective and well-resourced, has strict ethical policies, and uses modern plagiarism-checking systems. Hence, this university could offer rich data on students' literacy practices while using AI because institutional practices shape students' literacy practices. Considering these factors, this particular EMI university was a suitable research site for exploring AI as a literacy practice because it has a diverse group of graduate students who speak English as a foreign language and who are thus more inclined to utilize AI-based writing assistants in academic writing.

### **3.3 Data Collection Instruments**

In qualitative research, the data collection method should match the study's aim and the research questions (Braun & Clarke, 2013). Moreover, case study characteristics include the employment of multiple data collection methods to comprehend the phenomena and ensure data triangulation (Cohen et al., 2018; Creswell, 2013). Thus, to explore how AI-based writing assistants shape the students' literacy practices, this case study employed questionnaires, focus group interviews, and arts-based research tools, specifically significant circles and image cards, because focus group interviews and physical artifacts are among the most commonly used types of evidence in case study research (Yin, 2018).

#### ***Questionnaires***

The first research instrument that I used was a qualitative questionnaire (see Appendix B). Even though questionnaires are not standard in case studies (Hesse-Biber & Leavy, 2010), they offer valuable insights into the participants' actions, experiences, beliefs, and principles that guide their decisions (McLafferty, 2010). For this reason,

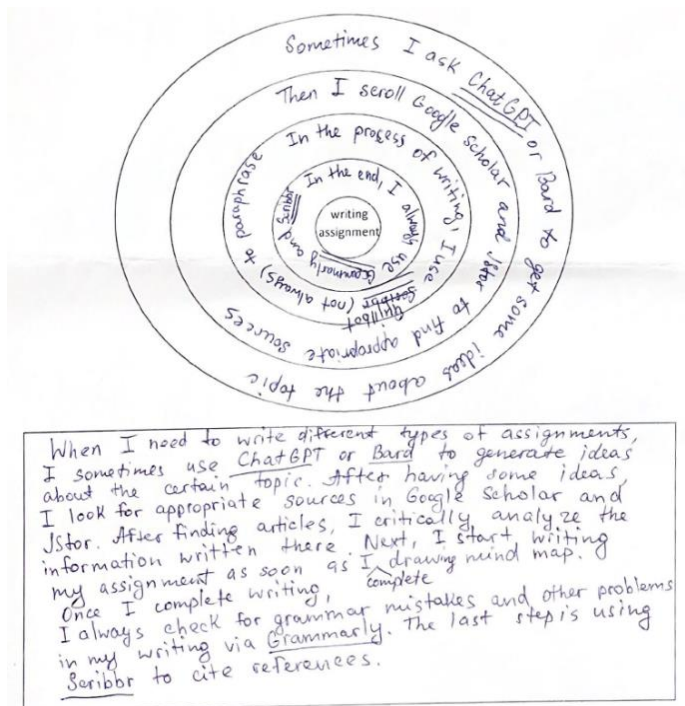
qualitative questionnaires were used to explore students' perspectives and experiences related to using AI-based writing assistants. My interest was not in numbers or statistics but in exploring participants' perspectives on using AI-based writing assistants for academic writing. Moreover, the questionnaires provided essential data that was analyzed and used to identify the common patterns and initial themes that I probed during the interviews (Braun & Clarke, 2013). I used the Qualtrics platform for the questionnaires, which was justified due to its ease of use and anonymity features. The questionnaires required approximately 20 minutes to complete and included 25 questions, of which eight focused on background information, 16 focused on the main research topic, and one allowed additional comments.

### ***Arts-Based Research Tools***

I also employed two arts-based research (ABR) tools because they offered the participants a safe space to contemplate their contexts and AI experiences, interpret them, and convey them to others (Butler-Kisber, 2018). Another justification for the ABR tools was their ability to enable a holistic and engaged approach that shifted power relations from the researcher asking the questions to the participants who explained their reality, perspectives, and experiences (Leavy, 2020). Therefore, this study included significant circles (Figure 5) as a second research instrument to explore the participants' AI perspectives and experiences and the rationale behind their use of AI-based writing assistants, while image cards were used during the focus groups.

**Figure 5**

*Example of a Participant's Significant Circle*



For the present study, I adapted significant circles, which were originally used to explore the individual's funds of identity (Esteban-Guitart, 2016), to capture the literacies involved in the process of writing with AI. Using significant circles in this way enabled me to see the holistic picture and map of students' AI use and understand which literacy practices were significant to them (Esteban-Guitart, 2016). To implement this tool, the participants were given an image of a significant circle of five layers, with an academic writing assignment placed inside the smallest circle (Banegas, 2022). Then, they filled in the other circles with the processes they followed to complete their assignments with AI. They then explained or reflected on the process in a textbox below the image (see Appendix C).

The second ABR tool, image cards, stimulated the participants' voices, enhanced their confidence, and empowered them to communicate their experiences and strategies for using AI in academic writing in a fresh, meaningful, and personal way (Marshall, 2007)

(see Appendix D). ABR tools can enhance qualitative research, enrich the data, and elicit and convey meanings unavailable through other methods (Greenwood, 2019). In particular, the image cards can help participants articulate their experiences and perspectives on a more conscious level, thereby revealing aspects of their experiences that they do not usually discuss with others (Bennett et al., 2013). I used this ABR tool to facilitate the students' deeper reflection on their academic writing experiences with AI (Figure 6). For this reason, I started the focus group interviews with image cards, asking participants to choose one card and reflect on their perspectives and experiences (McKay & Sappa, 2020). The image cards provided fresh insights into the students' AI use to capture details that I might have overlooked during the questionnaires (Greenwood, 2019; Eisner, 2008).

### Figure 6

#### *Example Image Cards*



*Note.* From "Compatibility Communication System," by L. Cutts & C. Browne, 2017, CCS Corporation. Copyright 2017 by CCS Corporation.

### *Focus Group Interviews*

Focus groups, the third data collection instrument, involved multiple participants discussing a topic provided by the researcher to capture a collective perspective (Cohen et al., 2018; Morgan, 1997). Focus groups yield detailed descriptions and insights into processes, enhancing the researcher's understanding of the previously limited issue (Hesse-Biber, 2016). Thus, focus groups were used because they were suitable for capturing in-depth data about students' use of AI in academic writing, which aligned with the purpose of this intrinsic case study. In addition, the focus groups aimed to tap into participants' attitudes, emotions, convictions, experiences, and responses in a way that is not easily achievable by employing other instruments like observations, individual interviews, or questionnaire surveys (Gibbs, 1997). That is, the dynamic nature of focus groups allowed me to gather unique data on how the participants used AI-based writing assistants for academic writing, reaching layers of understanding I might not have reached through conventional interview methods (Kitzinger, 1994). Focus groups allowed for group clarification and allowed the students to collectively challenge assumptions about their use of AI assistants that are usually taken for granted (Hesse-Biber, 2016). The interview protocol included image cards and six broad questions about the participants' perspectives and experiences using AI tools for academic writing (see Appendix E). In addition, the last instrument enabled me to triangulate the data because it allowed the participants to expand on their experiences and perspectives from their questionnaire responses and significant circles, thereby helping to validate the study's data (Yin, 2018).

### **3.4 Data Collection Procedures**

The data collection began in November 2023, after obtaining approval from the GSE Ethics Committee. First, I requested access to the research site by contacting the vice-provost for research, who approved access. After gaining access, I contacted program

directors at the graduate schools to recruit participants. The recruitment email outlined the purpose of the present research, its significance, potential risks and benefits, and time commitment in Kazakh, Russian, and English. It also provided my email, WhatsApp, and mobile phone for personal contact so that the participants could contact me directly, thereby maintaining confidentiality (Appendix F). Upon agreeing to participate, the participants received a Kazakh, Russian, and English consent form detailing the research procedures, time commitment, risks, and benefits. After signing the informed consent form (see Appendix G), the participants were invited to participate in the questionnaire, significant circle, and focus group interviews.

The data collection process lasted one and a half months. The participants began by completing an online questionnaire in Kazakh, Russian, or English at their convenience. Following the initial data analysis, the participants were asked to fill in the significant circle and reflect on their responses in a textbox. Subsequently, the participants were invited to take part in the focus group interviews, with the option of individual interviews for confidentiality. The interviews were conducted in a quiet, off-campus location to ensure participant comfort and privacy. Two individual interviews and two focus groups were conducted after conducting preliminary analyses. Before starting the focus group, each participant was requested to grant additional permission to audio-record the interview discussions before they began.

### **3.5 Data Analysis**

Analyzing qualitative data entails interpreting the text to generate new ways of combining, summarizing, and synthesizing the data; while there are no universally applicable approaches, the chosen method should align with the research purpose (Cohen et al., 2018). After the focus groups and individual interviews had been transcribed, the data from the interviews, significant circles, and questionnaires were analyzed by taking a

hybrid approach, including deductive and inductive elements (Proudfoot, 2023). The deductive element drew on the theoretical framework to code for pre-established themes, while the inductive element involved generating themes that emerged from the data. The integration of these themes mutually reinforced each other, thereby enhancing the reliability and validity of the study findings (Proudfoot, 2023).

The data analysis consisted of five stages. First, I created a table with three columns, each corresponding to one of the research instruments, to triangulate the data. To increase familiarity with the data, I focused on reading the questionnaires, significant circles, and focus groups through active, analytical, and critical reading and re-reading (Braun & Clarke, 2013). In the second stage, I generated several initial codes using inductive analysis, which means that I used process and values coding to elicit common themes and patterns directly from the data. During the third stage, I used a deductive approach to generate codes using predetermined codes based on my theoretical framework (Proudfoot, 2023) (Table 3). In the fourth stage, I thematically analyzed the inductive and deductive codes, which is “a method for identifying and interpreting patterns of meaning (themes) across qualitative data” (Braun & Clarke, 2013, p. 218) (see Appendix H for a coding excerpt).

**Table 3**

*Examples of Inductive and Deductive Codes*

| Interview extracts  | Codes                  | Subthemes                               | Themes   |
|---|------------------------|---|--|
| In the end, I always use Grammarly because <u>I might not notice minor punctuation errors.</u>  | Checking grammar       | Helping with mechanics                  | Benefits of AI in writing                        |
| After I have written it, I go to chatGPT or Google Translate to make my sentences cohesive and coherent. <u>I do not rely fully on ChatGPT as it always drastically changes my writing style.</u> When such situations happen, <u>I just put my sentences into Google Translate (from English to Russian, then tr vice versa).</u> As a result, | Searching is strategic | AI-informed research literacy practices | Emerging AI-informed academic literacy practices |

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Google gives me smoother translations and sentences.

In academic terms, AI suggests unreliable literature that is published in doubtful journals.

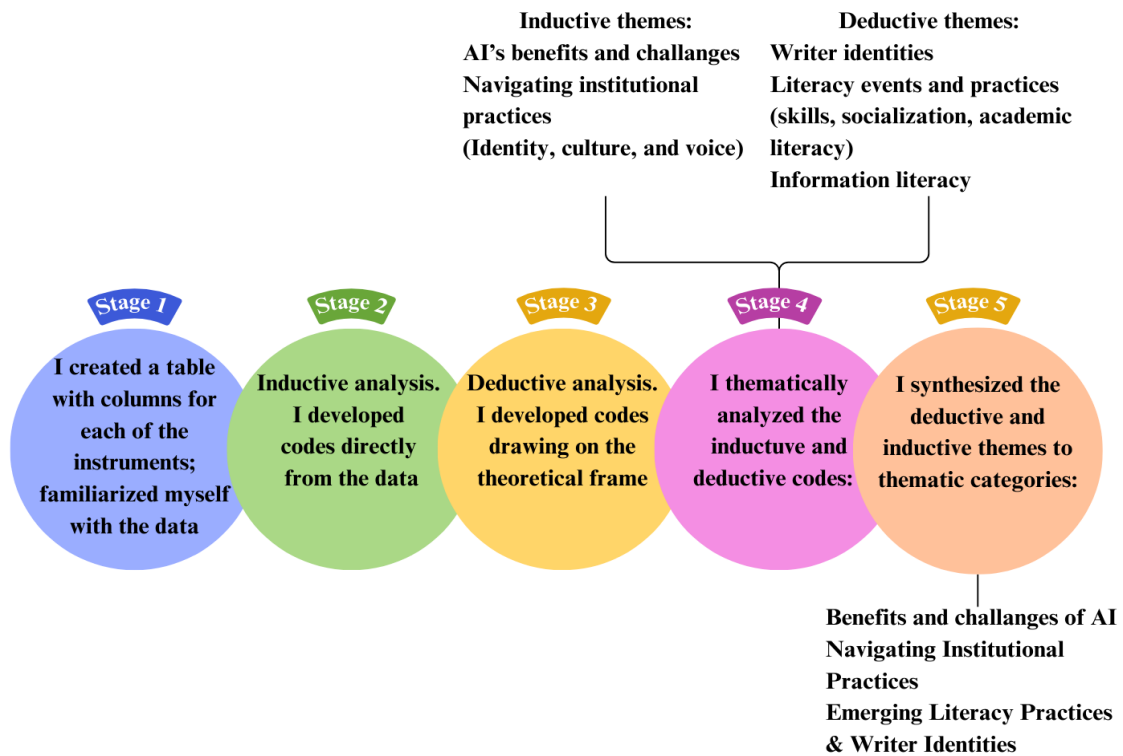
AI is unreliable

AI writing assistants' unreliability

Challenges of AI in writing

---

Subsequently, I grouped the initial deductive and inductive codes into separate themes to “ensure that the voices of the participants are valued while simultaneously allowing for more theory-led analysis” (Fereday & Muir-Cochrane, 2006, as cited in Proudfoot, 2023, p. 309). This provided a “framework for organizing and reporting the researcher’s analytic observations” (Clarke & Braun, 2017, p. 297). In the final stage, I synthesized the deductive and inductive themes to “(larger) patterns of meaning, underpinned by a central organizing concept - a shared core idea” (Braun & Clarke, 2013, p. 297), resulting in four main thematic categories (Figure 7), which were further utilized to answer the research question.

**Figure 7***Data Analysis Procedures*

The four main categories emerging from the data analysis were: benefits of AI in writing, challenges of AI in writing, navigating institutional practices, and emerging AI-informed academic literacy practices. Finally, I organized and structured these categories according to the research questions, combining the results from the questionnaires, significant circles, and the focus groups to draw conclusions with quotes and images to support each theme. These are presented in the Findings Chapter.

### 3.6 Ethical Considerations

When planning a study that involves human participants, the researcher must carefully consider how this research can potentially impact them in order to take action and precautionary measures to safeguard the participants and their dignity (Cohen et al., 2018). Thus, I focused on protecting my participants' anonymity and confidentiality during all data collection, analysis, and storage stages. To broaden my understanding of the

necessary ethical considerations for human subject research, I completed the Collaborative Institutional Training Initiative (CITI) program.

During data collection, I ensured that no personal information was collected from the participants. Participation was voluntary, and I informed the participants of their right to withdraw from the study at any data collection stage. To safeguard against disclosing personal information, I conducted focus groups and individual interviews in a secure location outside the university. Before participating, I reminded the participants of the limitations of anonymity in focus group interviews and their right to refuse participation or request individual interviews for confidentiality. I also asked for their consent to proceed. Before the interviews, I briefed the participants on respecting others' privacy and not sharing or discussing content. After the interviews, I conducted a brief debriefing emphasizing the importance of confidentiality and addressing any issues raised during discussions (Gibbs, 1997).

I replaced the participants' actual names with codes during and after data collection to transcribe the interview transcripts, significant circles, and questionnaires. I removed any identifiable information from the interview, questionnaire, and significant circle files to safeguard the participants' anonymity. I stored the data gathered from the interviews, questionnaires, and significant circles in a secure, password-protected laptop accessible only to me. Upon completion of the study, I will delete all password-protected data gathered during the study from the computer after two years as per NU research ethics policy.

### **3.7 Chapter Summary**

The present chapter described the methodology and research design that underpins this research. It presented the sample's description, an outline of the data collection process, and a thorough explanation of the research instruments used. Additionally, the

chapter explained the data analysis procedures and the ethical considerations, along with their implications. The following chapter will present the results obtained from the collected data.

## Chapter 4: Findings

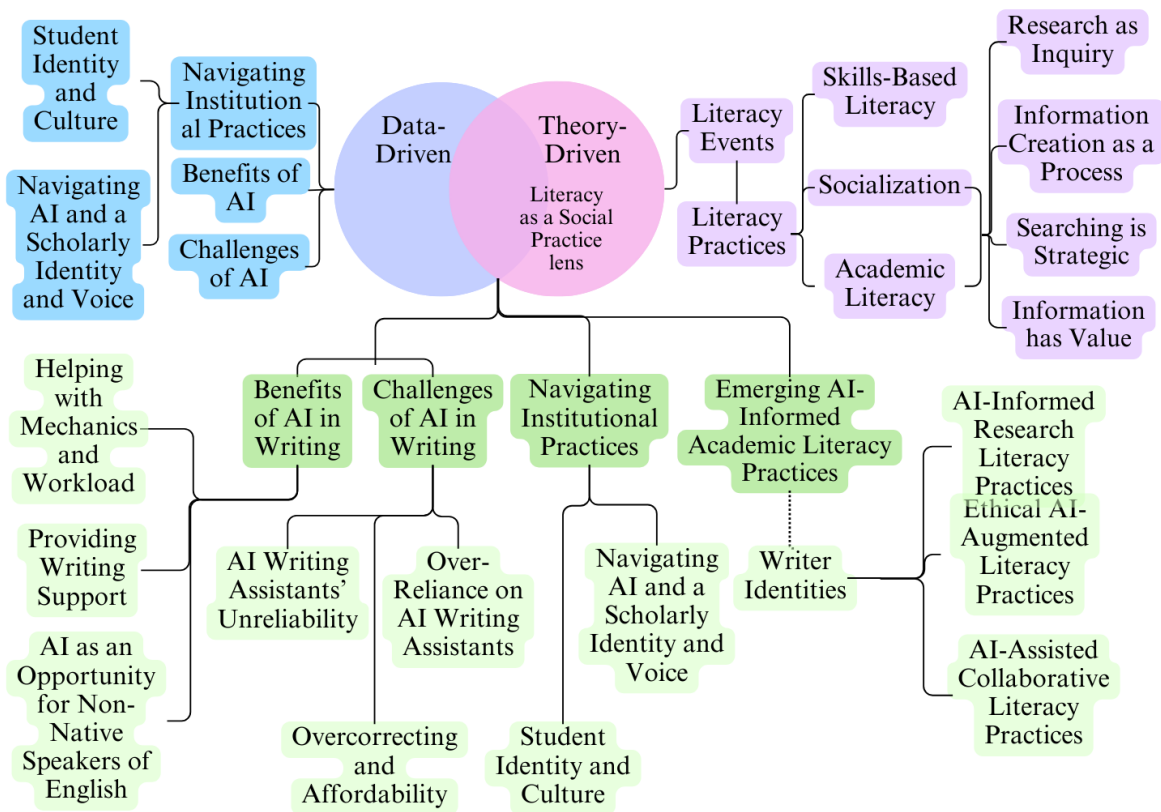
The present study explored how AI-based writing assistants can shape the literacy practices of graduate students at one Kazakhstani EMI university and the implications of this for their academic writing. The preceding chapter presented the methodology that underpins the present study, including the data collection and analysis, and ethical considerations. This chapter presents the findings obtained from eight graduate students at one Kazakhstani EMI university to address the research question and two sub-questions.

Main RQ: What literacy practices emerge when AI-based writing assistants inform graduate students' academic writing at one Kazakhstani EMI university?

Sub-question 1: What are students' perspectives and experiences of using AI for academic writing?

Sub-question 2: Why do students use AI-based writing assistants in writing?

The data analysis in this study involved inductive and deductive approaches, which provides the basis for the results about students' perspectives and experiences of using AI-based writing assistants for their academic writing. For a reminder, see the thematic map (Figure 8).

**Figure 8***Thematic Map*

The present chapter is structured into five sections that present the four main themes found across the inductive and deductive analysis and a summary. Section 4.1 presents students' perspectives and experiences about the benefits of AI-based writing assistants, while Section 4.2 presents their perspectives and experiences in relation to the challenges of using AI-based writing assistants (sub-question 1); Section 4.3 presents how students use AI writing assistance to navigate institutional practices associated with their scholarly identities (sub-question 2); Section 4.4 addresses the main research question about the emerging literacy practices associated with the utilization of AI in academic writing (main RQ). The chapter ends with a summary of the major findings (Section 4.5).

#### 4.1 Benefits of AI in Writing

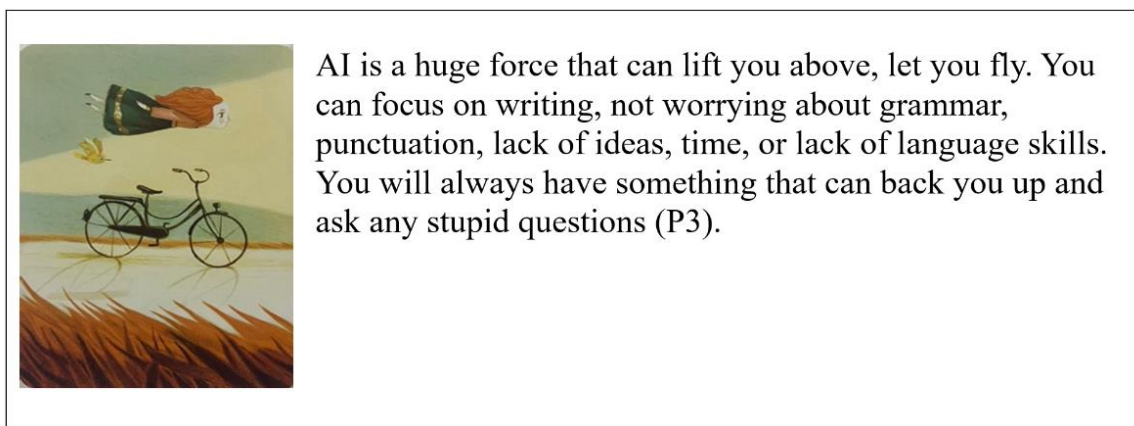
The findings identified two subthemes regarding the benefits of AI in writing: assistance with language mechanics and workload and guidance in the writing process.

### *Helping with Mechanics and Workload*

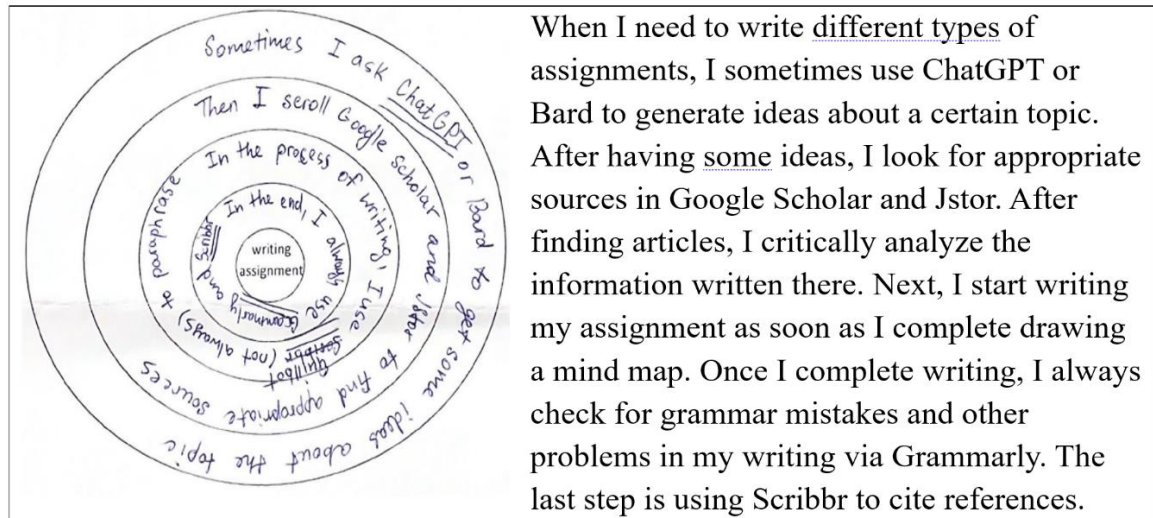
A dominant topic across the dataset concerned the way that AI writing assistants helped the students with language mechanics and decreased their workload. In particular, AI assisted students with proofreading their papers for grammar mistakes at the final stage of writing: “When I am already tired of writing, I might not notice such things. I do not want it [mistakes] to impede the quality of my work, which I put much work into” (P8). In addition, AI helped students “go beyond the lower-order things and focus on the meaning” (P3), thereby decreasing their workload and time spent on assignments. To illustrate, P8 explained that AI was a “time-saving machine ... [because] I can still write academic texts without their help, but it takes a lot of time to check my paper in the end and cite all the references.” Similarly, P1 stated that “it is saving a lot of time rather than I would sit and think and then rethink, [and] maybe reconstruct some sentences. So it is much faster.” These advantages are also vividly illustrated in P3’s image card (Figure 9).

#### **Figure 9**

##### *P3’s Perspective of Their AI Experience*



Another dominant topic was AI assisting in various stages of academic writing, which was also evident in the significant circles, where students indicated their practices to complete their academic assignments (Figure 10).

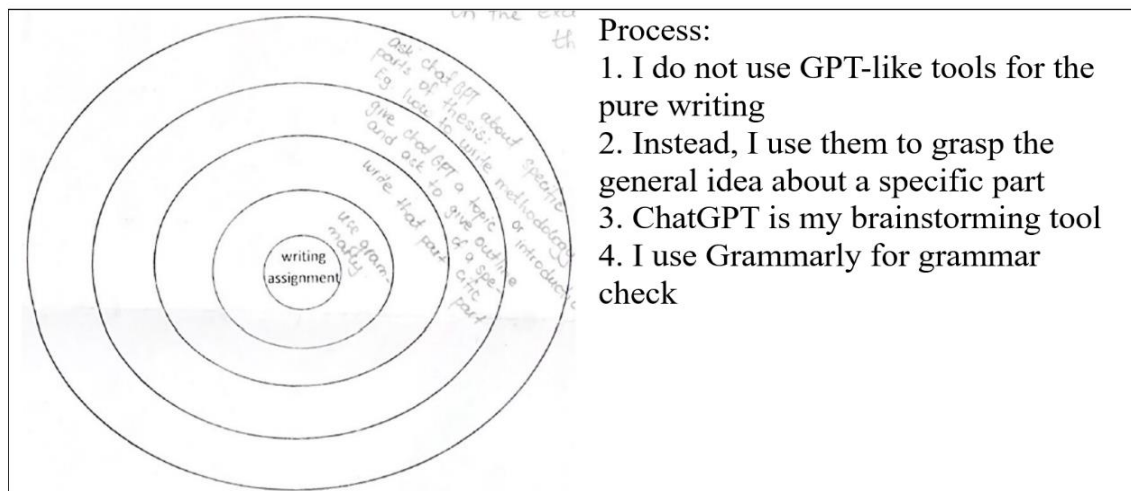
**Figure 10***Significant Circle of P8*

Overall, the three topics within the subtheme of helping with mechanics and workload showed that AI contributed to better grammar, minimized students' workload, and contributed to literacy practices that included various AI writing assistants such as ChatGPT, Bard, Grammarly, and Scribbr to provide academic writing support.

***Providing Writing Support***

The data analysis revealed that AI provided writing support in three major areas, namely assistance with brainstorming, organization, and scaffolding.

First, the students valued AI for brainstorming ideas as the first step in their assignment writing process. For example, P2 reflected: "Sometimes when I am stuck, it helps me to brainstorm about what to write." Brainstorming with AI writing assistance was also dominant in the significant circle tool, where the participants explained how they use AI for writing assignments as a literacy event. This is encapsulated in P4's literacy practices (Figure 11).

**Figure 11***Significant Circle of P4*

P2 also explained how AI's idea generation feature facilitated the writing process:

When students are stuck and do not know where to start, they go to AI to brainstorm and ask what to write about. Writing the first sentence of the first paragraph is always difficult because sometimes you do not know where to start or how to start. In that case, you go to AI, which might help you get ideas. Then, you can start your first sentence, and afterward, you just go with that flow.

Similarly, P6 noted that AI's ideas were helpful when facing ambiguous tasks or when writing instructions were not clearly articulated:

I use it for idea generation because sometimes we don't have an example of an assignment, and professors might say not request a particular structure of an assignment. AI might help... Especially if the task given by the instructor is quite ambiguous, vaguely explained, or does not have clear instructions. So, in order to come up with a topic for the writing assignment, you can use it for idea generation.

Secondly, the data revealed AI's ability to facilitate cohesion, coherence, and organizing their ideas. One student explained that instead of generating the whole text, AI could be used to improve it: "As long as you are honest with yourself and do not simply

generate text but work on enhancing and making it better and more coherent, AI does its job” (P6). Similarly, P1 pointed out AI’s capacity to guide their writing: “It shows the structure of how to write academic papers. It is helping to organize and structure my writing for academic courses.” P3 highlighted AI’s supportive role as a tutor or teacher:

I consult with ChatGPT sometimes, asking what this means trying to understand something, so it is like consulting with a teacher. I do not want to disturb teachers and am hesitant to text them sometimes. You do not know what they will think of you.

The third area of AI’s writing support was related to how AI functioned as a scaffolding tool. AI generated a possible outline for students’ papers and made the rubrics explicit for them to follow, as highlighted by P1:

Sometimes, we do not have an example of a writing assignment, or professors do not request a particular structure, so students have the freedom of choice. But on the other hand, we also have rubrics. AI might help us follow the rubrics and do the work properly. To request an outline of an assignment, I can write what we need to do on the ChatGPT. Then, it might suggest a possible outline.

This scaffolding advantage is further exemplified by P7:

Sometimes, it is not easy to understand some parts of the article’s paragraphs, so I use AI to summarize the parts I need help understanding. AI helps me summarize the key information, making it easier for me to use this information in my writing.

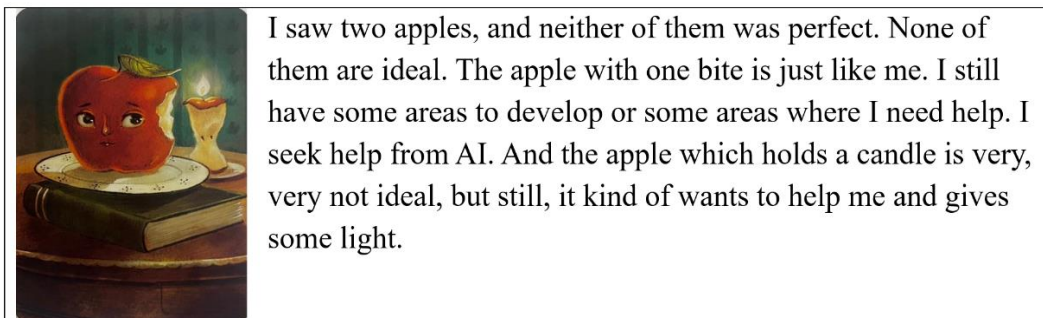
In addition, the data highlighted that AI scaffolded students by contributing to their meaning-making of dense research articles, explaining and clarifying complicated terms and theories. For instance, P1 acknowledged that AI leveraged their understanding of the text: “While writing, I can ask AI to explain particular sentences or meaning of challenging words.” Similarly, P7 mentioned that it “explained difficult terms in a simpler

way.” Thus, AI’s scaffolding ability gave them access, inclusivity, and empowerment, resulting in them not “struggling so much” (P5).

Finally, P8’s image card (Figure 12) illustrates that both the participant and AI have imperfections and seek assistance from each other.

### **Figure 12**

#### *P8’s Perspective of Their AI Experience*



Overall, AI assistants were highly valued by the students because they helped them to brainstorm, overcome writer’s block, and clarify ambiguous tasks. In addition, AI served as a scaffolding tool, helping students organize their thoughts, understand complex concepts, and follow rubrics, ultimately empowering them in their writing endeavors.

#### *AI as an Opportunity for Non-Native Speakers of English*

Another subtheme across the dataset regarding AI’s benefits was the role of AI in leveling the playing field for EFL writers. Most participants regarded AI as a means to equalize native and non-native students, calling it “a breakthrough for people whose native language is not English” (P6). The students could rely on it to improve their writing and enhance the quality of their papers since “some students may have great ideas and they have a lot of things to say, but they do not know how to write it properly in a high level that is required for academic writing” (P7). AI helped EFL students to overcome language barriers:

Since English has been a dominant language for such a long time, AI helps refine writing in a way that makes it clearer, more comprehensive, structured, grammatically, and stylistically readable while keeping the initial thought you put into the text. So, if students with poor English could not deliver their thoughts because of the language barriers before, AI now helps to overcome this issue if used smartly. (P6)

In contrast, other participants highlighted that while AI assistants like ChatGPT could help non-native English speakers improve their writing, there was still a clear distinction between the writing of native speakers and students:

It [ChatGPT] is like a multilingual person who can speak every language and does not have a clear language. When you compare the writings of the native speaker and non-native speaker who used ChatGPT, you will clearly see the difference. None of the AIs can fully replace the person. Therefore, if you are a non-native English person, you can just improve your writing as much as possible to satisfy your needs and have the level of [English] when you can clearly communicate with English speakers. (P4)

Another dominant topic within this subtheme was that the quality of writing depended not on “nativeness” but on individual efforts:

Nativeness does not make your writing better. Writing is a skill that needs to be acquired. Sometimes, non-natives can write way better and more beautifully than native ones because they have studied and worked hard. So, writing skills depend on practice and hard work that is done by a person, whether they are native or non-native. (P2)

Overall, these findings demonstrate the participants’ strong appreciation for AI writing assistants, particularly in addressing language mechanics and alleviating workload.

Additionally, the participants valued the scaffolding support that AI assistants offered during brainstorming and interpreting academic texts, which improved the coherence, structure, and organization of their writing. Notably, for these students, the AI writing assistants were functioning as a scaffolding tool or a more knowledgeable other, a role customarily taken by teachers. However, the participants also indicated that they experienced various challenges when using AI writing assistants to navigate academic writing.

#### **4.2 Challenges of AI in Writing**

Across the dataset, the students' experiences using AI writing assistants indicated AI challenges, such as its unreliability and lack of critical thinking, its tendency to over-correct, and students' fear of becoming over-reliant when using AI writing assistants in their academic writing practices.

##### ***AI Writing Assistants' Unreliability***

It became evident from the data analysis that the dominant challenge in writing with AI was the possibility of receiving unreliable suggestions or output. The data revealed students' challenges when AI occasionally provided incorrect references or did not provide references at all. For example, P2 stated that AI provided "irrelevant, false information with no citation and reference." Similarly, P5 reported: "The sources are not always accurate and sometimes provide nonexistent literature. AI suggests unreliable literature published in doubtful journals," while P8 noted AI's inability to critically evaluate data: "ChatGPT is not reliable in academic writing. It cannot synthesize and analyze ideas and literature as well as humans do. It does not have critical thinking" (P8).

Notably, some participants stated that critical thinking was important because it enabled the writer to understand "when the information is relevant and credible and when it is not" (P2). In contrast, poorly formulated prompts could lead to unreliable information

and poor-quality output, as P6 explained: “Most of the time, it is a human-factor challenge when I write prompts incorrectly or inaccurately.” Similarly, P5 stated:

AI should be perceived as a human, and one should not write everything in one question and make it like a long sentence and a long poem because sometimes it [AI] might be confused. AI might provide you with the wrong answer.

Another challenge in formulating prompts reported by the participants was language proficiency, as P5 explained: “Depending on the way you use prompts, it directly affects the effectiveness, yet to write these prompts, you have to have a sufficient level of English.” P7 also emphasized English language proficiency:

I think those who are proficient in English can take the meaningful parts from the task, but those who are not proficient do not usually pay attention to the reliability and repetitiveness of ideas. They just copy and paste the task without analyzing it.

However, the data also illustrated that language proficiency alone does not lead to the proper use of AI because it needs to be combined with critical thinking:

Proficiency alone does not guarantee better use of AI, but critical thinking does because one must see the difference between poor generative text and a good one. Although, with the current stage of AI writing tools, all texts are poorly generated, it can definitely be of good use if it checks the clarity of your text, but it is critical thinking that helps you make sure that it does not deviate from your intended message. (P6)

Overall, the participants mentioned that AI can provide false information, can be inaccurate, not credible, repetitive, irrelevant, and lack original thought, which results in the challenges they encountered when using AI writing assistants. Finally, the data also showed that limited language proficiency can hinder students in formulating correct prompts and that critical thinking is essential to overcome such challenges.

### *Overcorrecting and Affordability*

Another key challenge emerging from the data was AI's tendency to overcorrect the students' writing, especially automated written corrective feedback tools like Grammarly. In particular, the results showed that AI was occasionally excessively meticulous: "I like its grammar and spelling suggestions, but sometimes it overcorrects" (P3). Similarly, another participant argued that AI might be too critical in its grammar corrections despite being useful regarding the descriptive feedback it provides. The following extract illustrates the point:

I find it very useful and engaging. I always seek Grammarly feedback since it has descriptive details. When it comes to the drawbacks, I think sometimes Grammarly is too critical about the writing and too meticulous about the grammar. (P5)

Students particularly noted that sometimes overcorrections distorted their original message or the flow of writing. For instance, P1 expressed dissatisfaction with the influence of AI on their writing: "I am using Grammarly. I do not like that it makes me adapt to it and changes the flow of sentences." Likewise, P6 reported that AI decreased the word count and replaced common vocabulary with obscure words, thereby changing the meaning:

What I dislike about it is its suggestions to make my sentences less wordy or replace certain common verbs and words with some bizarre ones that do not convey the original meaning. Overall, I think it is a great tool, and I still use it at the end of the day, but I do not trust it blindly.

Apart from overcorrecting, the data revealed an unexpected limitation, which was the high prices of premium plans, which were unaffordable for some of these students, and the limitations of the free AI versions: "Its free version checks only grammar and punctuation without checking the meaning of sentences" (P8). They also argued that "free

plans for paraphrasing tools like QuillBot were inconvenient because of the 125-word limit” (P8). One of the participants also explained the potential bias and weaknesses of the free version, which “has no access to new data. GPT 3.5, for example, only has information about all the data until November 2022” (P4). Regarding the affordability, P3 shared:

Maybe universities and schools should provide access to such tools because some of them are paid. For example, I use the paid version of Grammarly and ChatGPT. But it might not be affordable for some students, which creates inequality between those students who can afford it and those who cannot. In this case, it is better to find a group of people to share it because handling its price alone is a bit tough.

Overall, the participants faced the challenges with AI occasionally distorting their ideas and the high costs of paid subscriptions.

### ***Over-Reliance on AI Writing Assistants***

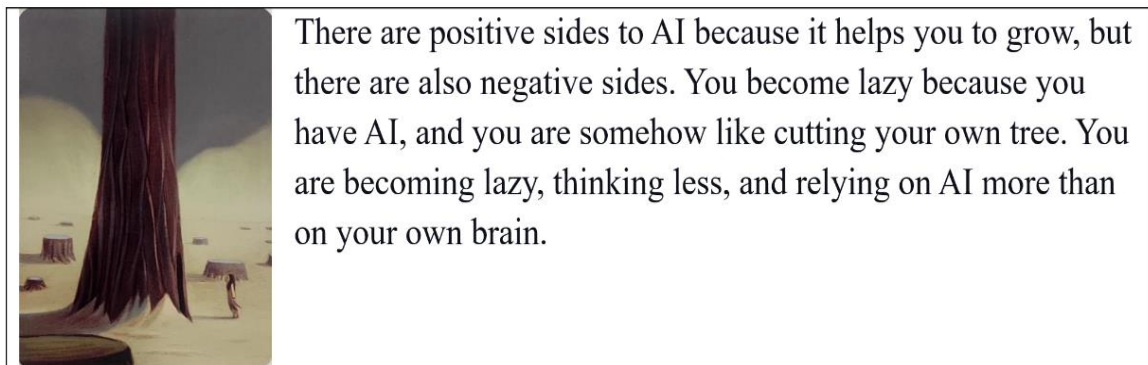
Another challenge across the dataset was the participants’ potential overreliance on AI tools. A common topic was participants’ urge to always check their writing with AI: “I started to feel as if my writing is not good enough and want to use it all the time” (P2). Similarly, P1 shared how she felt “vulnerable and insecure and have this constant feeling that this piece of text is not valuable,” while P5 admitted that she “could not live without AI tools” (P5). Likewise, P6 explained how he was growing used to the constant help of AI:

Gradually, it [ChatGPT] became an obsession, and even in super casual writing tasks where I was sure I did not need an AI tool, I would still double-check with it. Initially, I was okay with it, but gradually, it made me anxious as I even started doubting if I spoke English properly.

This point was also supported by the image card of P2, who commented that using AI might result in students relying more on AI than using their own cognitive abilities (Figure 13).

**Figure 13**

*P2's Perspective of Their AI Experience*



Overall, the findings suggest that these graduate students faced challenges due to the unreliability of AI assistants' output, their tendency to overcorrect, and the unaffordability of premium versions, potentially giving access to some while denying others optimal writing support, thereby contributing to educational inequality. The students also openly admitted fearing over-reliance on AI and becoming lazy or unmotivated to learn, which indicates how “literacy practices are patterned by social institutions and power relations” (Barton & Hamilton, 2000). In this case, students might have experienced fear because of the broader societal norms and the stigma associated with AI use or the self-as-author aspect of their writer identity, as discussed in the following subsection.

**4.3 Navigating Institutional Practices**

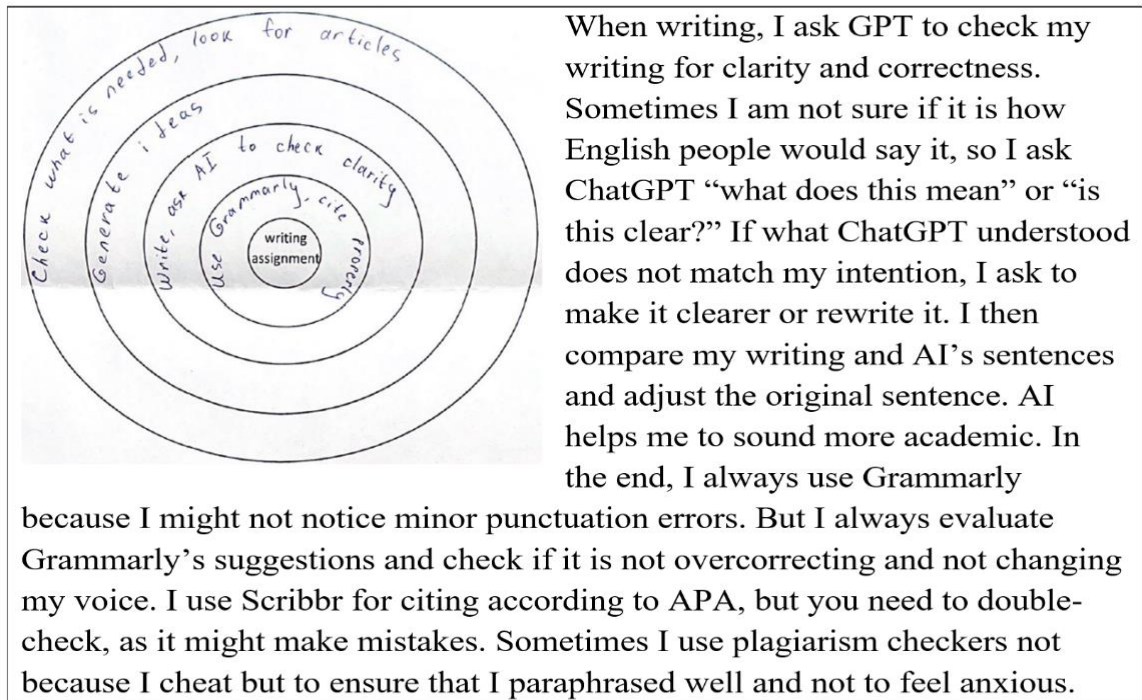
Another theme that was dominant across the dataset concerned the students' navigation of institutional practices, including two subthemes: student identity and culture; and navigating AI and a scholarly identity and voice.

The data analysis revealed that while using AI for academic writing, the students' attention shifted from a decontextualized focus on the grammar and mechanics of English

to more advanced aspects of writing, such as content and argumentation. As evident from the significant circles, the AI writing tools provided a space for academic socialization by helping to ensure clarity of writing and adherence to the academic English writing style, as well as citing and paraphrasing (Figure 14).

**Figure 14**

*The Stages of Writing the Assignment. The Significant Circle of P3*



Hence, while the findings revealed that the participants’ use AI for addressing grammar and punctuation, they also emphasized the academic socialization function of AI writing tools. That is, they helped students learn how to manage the content of their writing tasks more efficiently, thereby contributing to their development as academic writers within the scholarly community:

AI helps with my perfectionism. When I write, I tend to compose a paragraph and then edit it numerous times. As a result, I often experience writer’s block or lose my train of thought. Knowing that I have an AI that can help fix my grammar or punctuation eases my mind, allowing me to focus not on mechanics but on the thoughts I’m trying to convey with my writing. (P6)

AI tools help me to check if I built my argument correctly. I also ask it how to write a particular part. For example, I ask ChatGPT about specific parts of a thesis, like how to write methodology or introduction chapters. (P4)

Moreover, the data analysis revealed that the emergence of AI writing assistants has resulted in re-evaluating established social practices and power dynamics within the university community. The results also indicated the participants' awareness of how broader societal norms impact existing power relations. In particular, most participants did not want to admit to their professors that they were using AI because "they might get the wrong impression" (P1). In addition, academic standards shaped their perceptions of their own work and abilities:

I guess it is about what people will think of you when they learn that you use GPT, other chats, and so on. I am definitely not going to share this information with my teachers because they will immediately think that you used it to generate the whole text and just concealed it very well. While, in fact, it is not true. (P3)

Similarly, P4 said,

I would feel embarrassed to admit to my professor that I used AI in my papers, especially considering they're the ones teaching me. Saying that I did everything with AI is like saying my professor did not teach me anything.

However, the findings also indicate that there has been a shift in students' perceptions of the stigma associated with AI use, viewing it more as an empowering tool. In particular, the participants have reevaluated the concept of originality and the previously non-collaborative nature of knowledge creation:

I saw that other people were also using it [ChatGPT], and it is not plagiarism, copying and pasting the response; it is just relying on AI, like seeking some help

that will help you keep going and complete your task a little earlier, and you will do it alone. Now, I am not afraid or ashamed to say that I use AI tools. (P8)

Regarding originality, P6 said:

We have this overrated idea of producing something original and unique and something one of a kind. But, in reality, even without ChatGPT, many things have been constantly copied, redesigned, and recreated over many generations in human history. So, does this feeling of feeling not enough come from the inside of the person or from the outside? I think it is definitely outside. The overall pressure from the world and expectations from a student. (P6)

Critically, the participants also indicated how instructors could empower them with knowledge and skills to use AI tools independently, indicative of a potential shift in power. For instance, they gave pedagogical advice about how AI could be integrated into university teaching and in their learning process:

I think professors should not prohibit the use of AI. It would be smarter to show how to use it correctly in different courses. During the first week, the first lecture may explain which tools can be used. For example, professors may show the threshold until which the usage of AI is acceptable. If you go beyond that, then you will be penalized for some points. (P4)

Teachers can explain prompts for different purposes. There are different kinds of prompts that can be used in ChatGPT. For example, there might be a big encyclopedia of prompt types and how to use them to get the precise answers that you want to have. (P2)

To sum up, the findings regarding this theme show how the students re-evaluated social rituals, literacy practices, and ways of doing things within the university community. For example, they recommended that professors should not prohibit the use of AI but

instead show students how to use such tools correctly or create prompting resources, which illustrated a potential redistribution of power, where students are entrusted with the responsibility to use AI tools appropriately. Consequently, the findings suggest a noticeable shift in power relations between students and professors, challenging the traditional authority of professors as the sole source of knowledge, highlighting that the integration of AI tools is increasing the students' voices, autonomy, and agency in their learning process.

### *Student Identity and Culture*

The data analysis revealed that these graduate students were aware of academic integrity standards and the challenges posed by AI in maintaining these standards. For example, they were grappling with the ethical implications of AI use in academia, such as “academic dishonesty” (P1) and “risk of plagiarism” (P3), while also adapting to the incorporation of AI assistants into their learning processes: “I think professors and instructors are concerned about this issue because some students use AI and just copy and paste the generated ideas from AI to their writing” (P7).

A social practice lens was particularly valuable here in revealing the role of identity and cultural context in shaping students' attitudes towards AI and integrity: “Maybe AI helps someone overcome writing challenges, but for other people, it might be just an excuse to use AI and not put all your strengths and efforts into your work” (P5). Furthermore, the majority of the students did not perceive their use of AI as compromising their academic integrity because they performed “the biggest amount of work” (P1). Hence, the data illustrated how identity and cultural factors may influence students' attitudes towards ethics, possibly indicating broader cultural attitudes toward technology and academic integrity in Kazakhstan:

Some students have cheated in the past and will cheat in the present and future as well. It totally depends on the person. Such students feel that it is OK for them not to follow academic integrity. It definitely depends on a person's honesty. (P1)

The internet came to Kazakhstan relatively later than other countries. Some students even received access to the internet and AI simultaneously. So, I think that is why some teachers can be concerned since there is no concept of ethics in general. For example, not many people are aware of using certain materials and giving credit for them. In that sense, these concerns are justified. (P6).

It has been only two years since we were introduced to AI, right? I mean, it is just a recent phenomenon, and people started using it without knowing how to use it properly. Some people overuse it, writing the whole paper with AI. (P2)

In conclusion, even though the results indicated that these students were aware that information has value, as theorized in the information literacy framework (ACRL, 2016), there was a complex interplay in the EMI higher education context of this study between technology, ethics, education, and academic integrity. Thus, the findings reveal the importance of looking beyond AI use as decontextualized ethical skills to consider the cultural context in which students operate. This can help promote culturally and locally relevant ethical awareness and responsible AI use.

### ***Navigating AI and a Scholarly Identity and Voice***

One of the notable findings of this study was the participants' strong emphasis on preserving their personal identities and individuality in their writing and how they resisted AI tools overshadowing their voice: "When it alters my word choice and tone of voice or reorganizes sentences, it does not feel right to me—I would rather keep my voice in it, albeit imperfect" (P6). The findings also revealed how the social and cultural dimensions

of university writing practices shaped how the participants negotiated their use of AI to assert their scholarly identities and voices in the process:

I do not use AI to give me a ready piece of work. It just improves what I have already. It just makes my voice clearer and more straightforward without adding unnecessary words. For example, I have a route that is not properly made, and I am just applying AI, and it makes this route more beautiful. Therefore, the foundation of the writing is still mine. (P4)

It's not only that the teacher knows. I know my voice, and I know that it's the AI pattern voice. And if you blindly copy everything, obviously, that's not going to be your work. I think it's a good assistant, but it shouldn't be a tool that writes for you or a way to plagiarize or copy. (P6)

Moreover, the results indicated that graduate students have a nuanced understanding of authority and context (ACRL, 2016). When using AI in academic purposes, they successfully navigated the balance between their own voices and the suggestions offered by AI, recognizing the importance of maintaining their individuality and identity in their writing:

Most of the time, AI generates a text that is too perfect for a human. The person might use AI to just copy and paste text for an assistant. In this case, you lose your identity in your writing and your style of writing. If you are not putting effort or strength into your writing or your work, then it is not your work at all. It is just an AI's work. It is not only about generating text; it is also about the sense of belonging. (P5)

I believe that AI cannot be compared to a human who knows about academic standards and rules and how to generate very creative thoughts. When you read, you understand that the text does not have a soul. It is just clear that it was AI-

generated. You need to add some personal points to that, such as your opinion and vision, how you feel about a certain situation, and something like that. (P8)

Finally, the participants suggested that using AI tools during writing enhanced their critical reflexivity. The extracts that follow exemplify the participants' critical evaluation and personal judgment in refining their writing, viewing AI as a helpful tool rather than a replacement for their cognitive processes:

I can write, for example, what we need to do on ChatGPT. Then, it might suggest a possible outline. Then, I will analyze this outline to determine which one is suitable and which one is not. And some ideas might be repetitive. Some ideas may not even be connected to this topic. So it's very important to analyze the data, which is just GPT providing for other AI resources. (P1)

Learning is a process of using your own brain, not secondary tools. So, if you have a task, you should approach it in your own way. So, in that case, AI should not be a replacement. It should be an assistant tool. For example, if you are out of ideas or need some basics, or you need something to start, then it will be useful. But overall, it should be your own product. (P4)

I sometimes feel unsure if I managed to express what I wanted initially. So I ask ChatGPT, "What does this mean?" If its explanation does not match my thought, I edit my writing. Also, I can ask GPT "if this sentence is clear," and then if it is not clear, GPT offers its option. I see if this option is better, and if it is, I edit my sentence or use GPT's sentence. (P3)

Overall, the students' use of AI writing assistants involved intricate navigation of university's established practices, including the complex relationship between AI, their scholarly identity, and the voice that shapes the traditional shared experiences of students, faculty, and staff. By helping the students understand the importance of maintaining their

individuality and voice in their writing, AI facilitated the development of their authorial presence in writing or their self-as-author identities. Hence, while facilitating their authorial presence, AI opened up their possibilities for selfhood in the specific socio-cultural and institutional context (Ivanič, 1998). In short, the participants sought ways to leverage AI tools to enhance clarity and coherence in their writing while navigating ways to keep their unique voices and scholarly identities.

#### **4.4 Emerging AI-Informed Academic Literacy Practices**

Based on the students' perceptions and experiences related to the benefits and drawbacks of writing with AI (Sections 4.1 and 4.2) and their navigation of institutional social practices (Section 4.3), the findings indicate that integrating AI in the writing process contribute to the evolving nature of academic literacy practices. These evolving literacy practices include AI-informed research literacy practices, ethical AI-augmented literacy practices, and AI-assisted collaborative literacy practices.

##### ***AI-Informed Research Literacy Practices***

The results revealed that the graduate students in this study approached research as an inquiry-driven process, using AI assistants to explore and gather information relevant to their academic assignments (ACRL, 2016). The students tended to demonstrate curiosity, critical thinking, and information-seeking behaviors in their interactions with AI tools and other resources. For example, the participants employed AI assistants to generate “possible ideas on how to write particular assignments” and increase their understanding of the requirements of assignments “if the instructions are unclear” (P1). In addition, they “look for appropriate sources on Google Scholar and JSTOR” (P8) to find appropriate data that could support AI’s suggestions and “get(ting) ideas from ChatGPT, see if they fit your work but then look for articles yourself to support these ideas” (P3). Thus, even though the participants used AI writing tools to create potential outlines for their assignments, they

did not merely blindly “copy the suggested outline” but “analyze[d] and create[d] my outline choosing the reliable ones” (P1). This finding suggests that AI writing tools contribute to new AI-informed research strategies that are potentially empowering students of languages other than English to navigate complex information landscapes, critically evaluate sources, and ethically engage in scholarly communication.

### ***Ethical AI-Augmented Literacy Practices***

As evident from the data, the graduate students displayed appropriate scholarly identities, which was clear from their awareness of AI’s ability to generate unreliable data and false references that hold implications for bridging academic integrity. Thus, the results suggest that these graduate students know about the value of information in academic writing and the significance of ethical use. They demonstrated a strong commitment to follow academic integrity rules by properly citing and supporting the ideas they generated with “information from appropriate sources” (P5) and “always ask AI for references and citations in the prompt” (P5). In addition, P7 stated that they paraphrased the output provided by AI:

I use artificial intelligence only for support, but I do not one hundred percent rely on what it provides me with. If you do not want to plagiarize or copy-paste, I think it is important to take something that is related to you but paraphrase it as you use, for example, other sources, articles, or books.

The participants also reported developing the habit of always double-checking the information provided by AI, knowing that it might generate false data. For example, P5 stated,

I think that it is actually like extra caution and checking, which is actually good for some people because sometimes people forget to double-check their writing... And being more cautious about what you are writing and what information or sources

you are using. I definitely think these circumstances that AI creates. Then, you have to double-check and find other ways to integrate AI in writing.

### *AI-Assisted Collaborative Literacy Practices*

The findings showed that the participants were actively engaging with AI tools (Grammarly and ChatGPT) to refine and customize suggestions according to their writing tasks and preferences. This demonstrates a dialogic and collaborative writing process, illustrating how students are integrating AI as a literacy practice to enhance and achieve their writing goals more effectively. As reported in the previous sections, the participants highlighted the importance of ensuring that the paper “belonged to them” (P5).

Consequently, the results revealed the participants’ selective approach and awareness of their own writing style and preferences, indicating a deliberate effort to maintain their unique voices in their writing:

When Grammarly provides purple underlining comments, I usually do not pay attention. I think it wants to make it sound like how natives would write, but it irritates me sometimes because when it changes something; it is not how I wanted my idea to look. So, I see how I could change them and which parts I could use and develop so that they would suit my assignment. (P3)

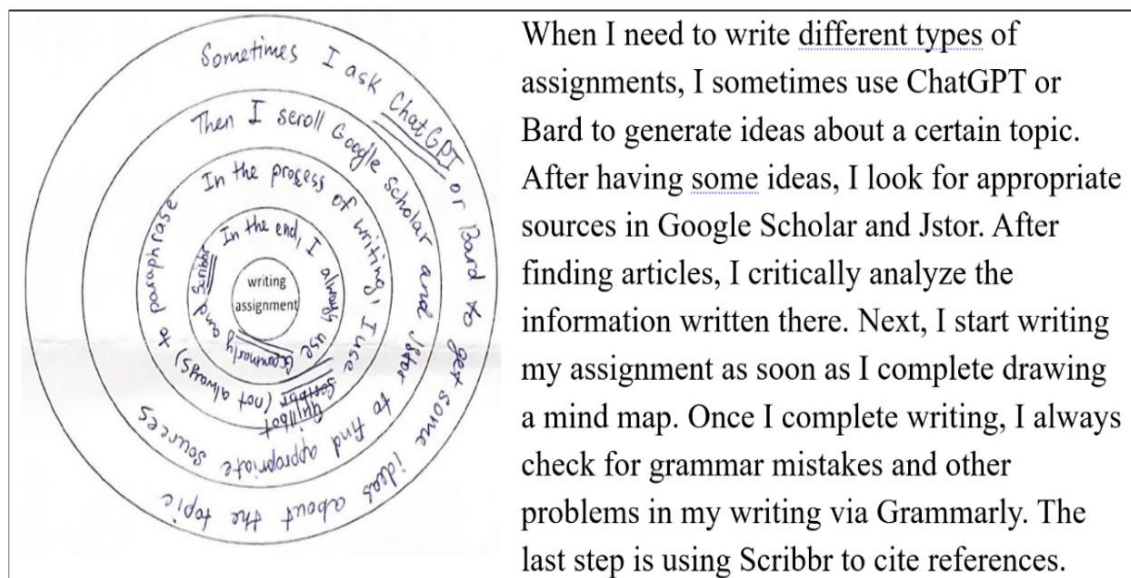
Moreover, the students noted that they used certain strategies to manipulate AI to search for information effectively, as stated by P5:

When I give instructions, I divide them into several sentences. For example, I request to write a text for a presentation. In the next sentence, I write what actual criteria should be included. The third sentence might be about the format: I want it to be plain text, bullet points, infographics, or maybe even pictures. Maybe the fourth sentence or third sentence might be about in what way, formal or informal.

In addition, the students were engaging in collaborative writing with AI by integrating it into various stages of writing, such as checking mechanics, brainstorming, organizing, and meaning-making. To illustrate, the students stated that to complete the assignment as a literacy event, there was a specific process consisting of four phases: identifying what was needed to complete the assignment, idea generation/brainstorming or generating a structure; searching for appropriate literature to support the ideas; writing, summarizing, paraphrasing, and seeking clarification from AI; editing, checking for grammatical errors and organization, and citing (Figure 15).

**Figure 15**

*Significant Circles of P8 and P1*





improving cohesion, coherence, and organizing writing. AI assistants also increased the students' comprehension of scientific readings and functioned as scaffolding tools.

2. There were several challenges of writing with AI, such as the unreliability of AI assistants' suggestions, the tendency to overcorrect, the unaffordability of the premium versions, and the issues with over-reliance.

The students' perspectives and experiences also revealed the following themes regarding research sub-question 2 (Why do students use AI-based writing assistants in writing?):

3. The rationale behind students' use of AI included their navigation of institutional practices and their student identity and culture, as well as developing their scholarly identity and voice.

Finally, the findings revealed the following themes regarding the main research question (What literacy practices emerge when AI-based writing assistants inform graduate students' academic writing at one Kazakhstani EMI university?):

4. AI assistants contributed to the evolving nature of academic literacy practices, including the emergence of AI-informed research literacy practices, ethical AI-augmented literacy practices, and AI-assisted collaborative literacy practices.

#### **4.6 Conclusion**

This chapter presented the findings on the literacy practices that emerge when AI-based writing assistants inform graduate students' academic writing. The findings were arranged based on the major themes that emerged from the data analysis, namely the students' perspectives and experiences about the benefits of AI writing assistants and their challenges, how they use AI writing assistance to navigate institutional practices associated with their scholarly identities, and the emerging literacy practices associated

with the use of AI in academic writing. The next chapter will discuss the results in connection with the theoretical framework and previous empirical research about AI and academic writing.

## Chapter 5: Discussion

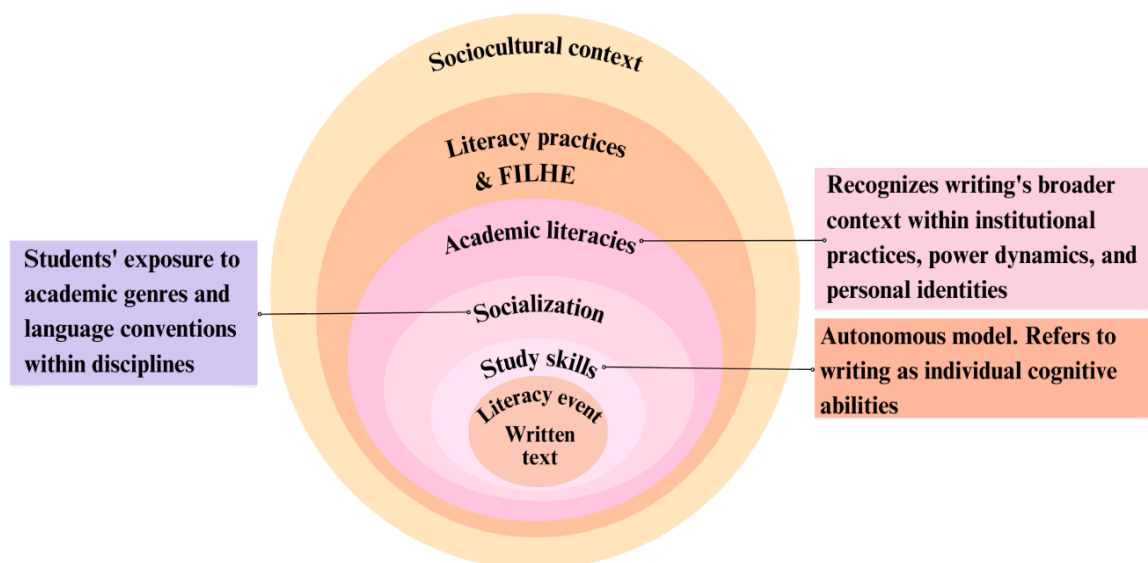
This study has explored how AI-based writing assistants can shape the literacy practices of graduate students at one Kazakhstani EMI university and their implications for their academic writing. The previous chapter reported the findings of the present qualitative case study. The present chapter aims to critically analyze and discuss the findings in connection with the existing literature and the applied theoretical framework, which is centered on literacies as social practices theory (Barton, 2001; Ivanič, 2004; Street, 1984) and the framework for information literacy for higher education (FILHE) (ACRL, 2016).

### *Revisiting the Theoretical Framework*

As described in Chapter 2, the present study applied the literacies as a social practice theory (Barton, 2001; Ivanič, 2004; Street, 1984), which enables the researcher to capture the specific ways participants think about and engage in reading and writing within a particular cultural setting to provide comprehensive insights into the dynamics of literacy within the academic writing domain (Barton & Hamilton, 2000; Street, 2017) (Figure 16).

### **Figure 16**

#### *Theoretical Framework*



In addition, the study employed the concepts of literacy events and literacy practices, which allowed me to look at distinct instances where individuals employed AI to facilitate different writing tasks, such as brainstorming ideas or refining content. The concepts of study skills, socialization, and literacy practices were used to explore how AI is affecting students' literacy. For example, the continuous integration of AI into the writing process forms a literacy practice, demonstrating its routine use as a valuable tool for drafting, editing, and generating content (see Chapter 2, pages 25-34, to gain a more comprehensive insight into this theoretical framework). The study also employed the FILHE suggested by the Association of College and Research Libraries (ACRL), which consists of six frames, to explore how AI can shape students' information literacy: "authority is constructed and contextual, information creation as a process, information has value, research as inquiry, scholarship as conversation, searching as strategic exploration" (ACRL, 2016, p. 8).

The study consisted of one main research question and two sub-questions:

Main RQ: What literacy practices emerge when AI-based writing assistants inform graduate students' academic writing at one Kazakhstani EMI university?

Sub-question 1: What are students' perspectives and experiences of using AI for academic writing?

Sub-question 2: Why do students use AI-based writing assistants in writing?

This chapter responds to and discusses the research questions mentioned above. To address and discuss the main question (Main RQ) about emerging literacy practices, I will first present graduate students' perspectives and their experiences on AI assistants (SQ1), and then I will discuss why graduate students use AI writing tools in academic writing (SQ2).

I will now move on to answer and discuss the first sub-question.

### **5.1 The Students' Perspectives and Experiences of Using AI for Academic Writing**

In examining the students' AI perspectives and experiences as social practices and situated literacies, the LSP perspective revealed how the cultural context shaped their use of AI writing assistants and shed light on the evolving landscape of academic writing with AI. The students' perspectives and experiences were directly related to the academic institution's social practices. That is, university practices such as academic writing and academic integrity determine how the students use AI writing tools. Thus, their use of AI was deeply embedded within scholarly cultural values on literacy practices (Street, 2017). For this reason, the participants experienced advantages and challenges as they navigated their academic writing with AI writing tools, which aligns with previous studies about the affordances of AI for corrective feedback (Barrot, 2021; Crawford et al., 2023; Ebadi et al., 2022; Fan, 2023; Kikalishvili, 2023; Lin & Chang, 2020; Lund et al., 2023; Su & Yang, 2023; Vázquez-Cano et al., 2021), the technical or free version challenges and ethical considerations in particular (Crawford et al., 2023; Kikalishvili, 2023; Lund et al., 2023; Perkins, 2023; Su & Yang, 2023). However, a social practice perspective went beyond descriptions of the advantages because it revealed the paradoxical nature and inherent complexity of students' reliance on AI writing tools. In the following paragraphs, I will discuss the three main benefits and the major drawbacks of writing with AI.

First, the data showed that the students held positive views on AI due to its assistance in navigating language mechanics and grammar, thereby enhancing the cohesion, coherence, and overall organization of their writing through real-time proofreading. For example, the participants mentioned AI's ability to highlight "minor mistakes that I did not notice while writing my paper" (P8) and "go beyond the lower-order things and focus on the meaning" (P3). This is consistent with previous studies about AI's help with grammar, punctuation, and accuracy in writing (Barrot, 2021; Ebadi et al.,

2022; Kikalishvili, 2023; O'Neill & Russell, 2019; Vázquez-Cano et al., 2021). Through the LSP perspective, the students' positive perspectives were aligned with the study skills view of literacy, which means their literacy development "is unlikely to be negatively affected" by their use of AI writing tools (Anson, 2024, p. 7). Hence, the study results concur with Anson (2024), who argued that "students' literacy as solely grammatical correctness is least at risk from LLMs" and "if there is any use of LLMs that instructors should feel comfortable with, it is likely this one" (p. 9). That is, graduate students' use of AI for grammar and language support helps to "add details and fill in gaps" (Krishnan, 2013, p. 19), enabling academic instructors to envision the "future possibilities" (Barnett, 2012, p. 1) of using AI within their existing academic writing pedagogies and disciplinary courses.

Second, students' positive experiences with AI revealed its significant contribution to their understanding of the community of practices (CoP), particularly in their scholarly positioning and adherence to academic integrity through citation generation and appropriate referencing styles (Lave & Wenger, 1991). More specifically, the students viewed AI writing assistants favorably due to their role in fostering comprehension of the university culture, language usage, and the esteemed reading and writing practices intrinsic to academic settings (Lea & Street, 1998; Lillis & Curry, 2010; Van Heerden, 2015). This finding emphasizes that AI writing tools can scaffold graduate students learning about "being part of a writing community, making writing an explicit practice, and positively identifying as an academic writer" (Quynn & Stewart, 2021, as cited in Davenport, 2022, p. 4). Additionally, AI facilitated their academic socialization by imparting an understanding of the importance of evidence, academic integrity, and clarity in communication, enabling them to participate in and navigate scholarly discourse (Anson, 2024).

Previous research about AI has merely emphasized its capacity to enhance academic writing, research productivity, and publication quality (Barrot, 2021; Ebadi et al., 2022; Kikalishvili, 2023; Lund et al., 2023; O'Neill & Russell, 2019; Vázquez-Cano et al., 2021). In contrast, the present study, guided by the LSP theory, demonstrated AI's capacity to promote students' socialization into university literacy practices, foregrounding the theory's capacity to unveil novel insights into the field of AI and academic writing. Consequently, this study's results suggest that instructors should utilize AI writing tools in their pedagogy to offer sensemaking spaces for students "to see that things could always be other than they are" (Molinari, 2022, p. 9).

The third major benefit of writing with AI is related to AI's ability to foster positive student identities by giving them access to scholarly discourses, which are ways of believing, thinking, and doing academic writing (Gee, 2002; Ivanič, 1994). For example, one student said that "AI helps refine writing in a way that makes it clearer, more comprehensive, structured, grammatically, and stylistically readable while keeping the initial thought you put into the text" (P6) and "I feel empowered; it saves my time, eases my mind, and most importantly, helps with my writer's block" (P6). These findings concur with those of O'Neill and Russell (2019), who identified AI as boosting students' long-term confidence in their academic writing skills, and Crawford et al. (2023), highlighting AI's capacity to reduce anxiety and foster self-determination and motivation. However, viewed through the perspective of literacy as a social practice (LSP), the findings go beyond language, to highlight the role of AI writing assistants as collaborative partners for brainstorming, generating ideas, and scaffolding the required social practices associated with writing (Chan & Hu, 2023; Fyfe, 2022). Thus, the study found that AI writing assistants emerged as active agents in the collaborative construction of meaning within the social practice of graduate students writing, emphasizing Bakhtin's notion of dialogism,

requiring deeper interrogation of the dynamic and reciprocal nature of AI communication for academic writing purposes (Bakhtin, 1981, 1984, 1986).

Despite the students' positive experiences, the study also revealed their negative perspectives on using AI writing tools related to skill-based literacies and academic socialization. In particular, students noted AI's tendency to overcorrect their language errors (skill-based literacies), the unreliability of its suggestions, and potential overreliance on these tools (socialization). For example, P5 mentioned, "I do not use generative AIs, particularly for generating texts and passages, since AI does not provide accurate sources," while P6 noted, "What I dislike about it is its suggestions to make my sentences less wordy or replace certain common verbs and words with some bizarre ones that do not convey the original meaning." While these findings are in line with the findings of previous studies (Barrot, 2021; Chan & Hu, 2023; O'Neill & Russell, 2019; Perkins, 2023), these studies do not draw on a social practice perspective, thereby failing to highlight how students' use of AI writing tools holds the potential for shaping their identity as ethical scholars. Through the LSP perspective, this study revealed that through grappling with AI-related challenges, such as source reliability and maintaining writing integrity, students engaged in ethical inquiry and critical reflection. Thus, a social practice perspective revealed its potentially transformative role in fostering ethical scholarship and shaping scholarly identity.

The disadvantages found in this study offer a more thorough comprehension of the potential of AI incorporation into future academic writing pedagogical considerations. Therefore, the study's results offer insights into the dynamics of how AI assistants might shape the future of academic writing, challenging universities to engage with the "possibilities, imagination and exploration" of using AI writing tools because "the future isn't waiting. It is already with us" (Rothblatt, 2012, p. 15). Thus, universities could support students' navigation of AI.

Overall, the students' perspectives and experiences with AI revealed the major benefits of AI in academic writing, emphasizing its role in helping with study skills, understanding the community of practices, academic socialization, and fostering student identities. The disadvantages of writing with AI were related to skills-based literacy and socialization, shaping their identity as ethical scholars.

I will now move on to answer and discuss the second sub-question: “Why do students use AI-based writing assistants in writing?”

## **5.2 Rationale Behind the Students’ Use of AI-Based Writing Assistants in Writing**

This study revealed that graduate students’ use of AI writing assistants was directly linked to the social and cultural practices of their university. For instance, the students used AI because literacy events such as “reading and writing are the central processes for learning” (Anson, 2024, p. 5). The LSP perspective revealed that AI writing assistants offered the students a space to navigate and make sense of the complex and often hidden social and institutional practices associated with being ethical scholars, writing in a scholarly manner, and allowing them to develop scholarly identities and voices. I will further discuss five major reasons behind students’ use of AI writing assistants.

First, the graduate students used AI writing assistants to refine their “writing in a way that makes it clearer, more comprehensive, more structured, grammatically, and stylistically readable while keeping the initial thought you put into the text” (P6). These findings are in agreement with those of Wu (2015), who revealed that Chinese students at British universities experienced challenges due to the lack of knowledge of writing practices at the postgraduate level at their universities. That is, the students utilized AI writing tools for study skills purposes, referred to as a traditional model that focuses on the array of skills that can be taught and learned through explicit instruction and practicing (Lea & Street, 2006; Street, 2017). These findings also concur with Ablazimova (2022)

and Batyrkhanova (2020), who showed that Kazakhstani students use Grammarly and Google Translate to cope with academic writing challenges such as grammar deficiencies and insufficient vocabulary.

In addition, the students in the present study used AI writing assistants as multilingual tools, which enabled them to freely express their thoughts in English. This finding is aligned with previous studies reporting AI's role as a bridge to overcome language barriers (Borger et al., 2023; Chan & Hu, 2023). Thus, this study found that even when EFL students utilized AI assistants for study skills purposes, it holds the potential to operate as "an empowering and inclusive tool" (Borger et al., 2023, p. 927).

Second, the results showed that graduate students shifted from a decontextualized focus on English language grammar to content and argumentation. More specifically, they shifted to using AI writing assistants for the navigation of the institutional communities of practice (CoP) (Lave & Wenger, 1991; Thesen & Cooper, 2013; Wenger, 1998). This shift revealed that AI writing assistants can contribute to graduate students' academic socialization into the scholarly discourses of academia (Anson, 2024). This finding contrasts with Anson (2024), who argued, from an academic socialization point of view, that AI threatens students' literacies disrupting their learning of academic practices and knowledge construction. For example, the present study indicated that AI writing assistants contributed to an increase in graduate students' awareness of research as inquiry, of using information literacy strategies to understand the purposes and the requirements of their assignments, to generate ideas, and to create organizational structures (Lea & Jones, 2011). However, these results might be caused by the fact that the participants were graduate students, who were already acculturated into disciplinary practices. In addition, students used AI writing tools for navigating academic integrity and ethical academic writing. The findings are in agreement with Fyfe (2022), some of whose participants increased their

commitment to their own authorial voices when encouraged to cheat on their assignments using generative AI, while others tried to negotiate what plagiarism and writing meant. As a result, the participants in the present study used AI for scholarly writing and navigated the power relations associated with the academic integrity rule to project an image of ethical scholars (Dillon, 2024).

Third, the students used AI writing tools to become active participants in constructing knowledge and contributing to the ongoing discourse within their field (Lea & Street, 2006; Street, 2015; Turner, 2018). Thus, AI writing tools have the potential to mediate an academic literacy model as students engage in epistemology and power dialogues, so long as they ask AI to modify existing pieces of writing instead of requesting AI to write it for them (Anson, 2024). In the present study, the students did not ask AI assistants to write for them but employed AI as dialogic and collaborative writing partners that reinforced their identity as co-constructors of knowledge and their understanding of how knowledge is constructed, contested, and legitimized within academic contexts (Barton & Hamilton, 2000; Holbrook et al., 2022). Interestingly, the results showed the interplay between critical thinking, academic maturity, and ethical considerations in navigating AI's output and suggestions. For instance, P3 said that "our metacognitive awareness is more developed than school or bachelor's degree students," while P8 highlighted that "you need to add some personal points to that [AI's generation], saying your opinion and vision, and how do you feel about a certain situation." This finding aligns with Dillon et al. (2024), who showed graduate students' awareness of their "responsibility to go back and forth and read and check and recheck" in using LLMs ethically and correctly (p. 4). In the present study, the students' maturity and postgraduate study level facilitated their use of AI to develop their discursive writer identities, authorial voices, and ethical navigation of AI writing tools (Dillon et al., 2024).

Fourth, the findings indicated students' active participation in their own learning and a potential shift in power relations, which was visible in students' views about how their instructors should draw on AI writing tools in their pedagogy: "I think professors should not prohibit using AI. It would be smarter to show how to use it correctly in different courses" (P4). That is, AI may be encouraging a shift towards more participatory and collaborative learning environments where students have a voice in shaping the educational practices and technologies employed in their learning experiences, aligning with the notion that literacy practices are not static but are subject to constant negotiation and redefinition within social contexts (Barton & Hamilton, 2000; Lea & Street, 1998, 2006; Street, 2017).

Finally, this study found that the graduate students used AI to develop their own scholarly identities and voices. For example, they stated that AI-generated sentences were artificial and distorted the way they wanted to sound. For these students, preserving their academic voices, individuality, and scholarly identities was essential because "when it alters my word choice and tone of voice or reorganizes sentences, it does not feel right to me. I would rather keep my voice in it, albeit imperfect" (P6). This finding is in contrast with Oliva-Girbau and Gubern (2015), who found that multilingual non-native speakers of English, as they learned to function within English academic genres, "viewed their own genres, cognitive processes, and identities as defective and inadequate in opposition to those of native English speakers" (p. 395). Hence, the students offered insights into the nuanced dynamics shaping the future of academic writing, requiring instructors to explore AI's potential to create pedagogical spaces where students can engage with their emerging scholarly voices and move from the periphery towards the center (Bedeker & Kerimkulova, 2024; Lave & Wenger, 1991).

Overall, the findings suggest that the graduate students used AI writing assistants for study skills purposes and to navigate institutional communities of practice and power relations to project an image of ethical scholars. The students also used AI to become active participants in knowledge construction and contribute to the ongoing discourse within their field. AI might potentially encourage a shift towards more participatory and collaborative learning environments, where graduate students can develop their own scholarly identities and voices.

I will now move on to answer and discuss the main research question: “What literacy practices emerge when AI-based writing assistants inform graduate students’ academic writing at one Kazakhstani EMI university?”

### **5.3 Emerging Literacy Practices**

This sub-section discusses emerging literacy practices shaped by AI-based writing assistants. I will first discuss how AI affected the students’ literacy practices in general and then focus on the three major emerging literacy practices specifically.

In examining the impact of AI-based writing assistants on graduate students’ academic writing within the setting of a Kazakhstani EMI university, the LSP perspective revealed that AI writing tools contributed to students’ navigation of the institutional social practices, such as academic integrity and academic writing, and holds the potential for shaping emerging AI-assisted literacy practices. The LSP perspective revealed how AI writing tools shifted participants’ attention from skills-based approaches (Anson, 2024) that focus solely on grammar and language mechanics to more advanced aspects like conveying their thoughts effectively, building strong argumentation and providing assistance in organizational structure and understanding assignment purposes. The data overwhelmingly showed how students questioned or adapted AI-generated recommendations for their academic writing, contributing to developing these graduate

students' scholarly voices, agency, and stance (Holbrook et al., 2022; Ivanič, 1998). This suggests that graduate students' integration of AI in their scholarly writing should best be understood as a set of institutional and social practices requiring a focus on how AI writing tools can facilitate and mediate students' academic socialization. It also indicates a potential reimagination of how instructors' pedagogy can draw on AI to make explicit the rules embedded in different academic or disciplinary communities of practice (Anson, 2024; Barton, 2001; Ivanič, 1998). Consequently, the results of this study present a challenge for universities to revisit or reimagine how AI technologies can be included in curricula, pedagogy, and assessment to embrace the "University of the Future" because failure to do so might result in higher education remaining "the University of the Past" (Morley, 2012, p, 27).

A key finding about the navigation of institutional social practices was that the university's literacy events, such as scholarly writing, directly shaped the graduate students' AI literacy practices and their perspectives about who they were becoming as scholars and writers. The findings showed that AI has the capacity to transcend language barriers and make institutional practices more transparent, holding the potential to broaden students' avenues for self-expression and identity formation (Borger et al., 2023; Ivanič, 1998; Steele, 2023). For this reason, students utilized AI, whether consciously or unconsciously, to conform to institutional standards of academic writing in their attempts to embody the identity of proficient English-speaking emerging scholars. Therefore, the results suggest that AI writing assistants can be a multilingual mediating tool in EMI universities to scaffold and construct EFL students' identities as proficient researchers despite their non-native speaker-researchers' identities. That is, AI has the empowering potential to construct positive selfhood opportunities for EFL writers, thereby challenging the privileged status assigned typically to native English speakers (Canagarajah, 2019;

Ivanič, 1998; Roozen & Erickson, 2017). In short, by using the LSP perspective, the present study showed that AI can promote equity by offering EFL students the linguistic support and resources they need to succeed academically, regardless of their language background (Steele, 2023).

In addition, the results highlight that AI tools activated students' autonomy, voice, and writer identity as they began to challenge the traditional power structures within academia. For example, the participants included pedagogical recommendations for instructors to "be smarter to show how to use AI correctly in different courses. Maybe they can add a list of AI tools that are allowed to be used in the class, show prompt types and how to use them, to construct the assignments differently so AI will not be able to do this assignment" (P4). This finding aligns with Barton and Hamilton's (2000) proposition that "literacy practices are patterned by social institutions and power relationships, and some literacies become more dominant, visible, and influential than others" (p. 8). Indeed, AI-informed writing tools are transforming the dominance of traditional writing practices, highlighting how students' everyday literacies, once marginalized or overlooked, are becoming more prominent, visible, and influential within academia (Barton & Hamilton, 2006; Lea & Street, 1998, 2006; Street, 2017). Therefore, this study underscores that AI writing assistants can serve as a bridge to address the gap between students' and instructors' expectations in EMI settings (Zhou et al., 2019). I will further discuss the three specific emerging literacy practices shaped by AI writing assistants.

First, the LSP perspective revealed the potential for new literacies to emerge, such as AI-informed research literacy practices. For example, in this study, the graduate students approached research as an inquiry-driven process, employing AI assistants to investigate and collect information pertinent to their academic tasks. Thus, they were "matching information needs and search strategies to appropriate search tools; design and

refine needs and search strategies as necessary” (ACRL, 2016, p. 22–23). Hence, the results indicated that AI can contribute to scholarly dispositions associated with “using information effectively to accomplish a specific purpose” and “giving credit to the original ideas of others through proper attribution and citation; articulating the purpose” (ACRL, 2016, p. 16–17). Furthermore, the students’ literacy practices demonstrated an understanding of the value of information by “giving credit to the original ideas of others through proper attribution and citation.” They also displayed research as inquiry skills, which include the practice of “synthesizing ideas gathered from multiple sources” (ACRL, 2016, p. 18). Thus, the use of AI writing tools expanded the students’ literacy and critical information literacy experiences, fostered scholarly identities about the value of information, and developed their sense of self or writer identities, such as their discoursal selves, since students could embody the identity of proficient English-speaking emerging scholars. This suggests that AI writing assistants can be used to induct or socialize EFL students into their academic or discourse communities, potentially developing their discoursal writer identities, which refer to the “values, beliefs, and power relations in the social context in which [texts] were written” (Ivanič, 1998, p. 25). This is essential for students’ effective participation in the academic community (Canagarajah, 2019; Roozen & Erickson, 2017).

Second, AI writing tools contributed to ethical AI-augmented literacy practices, foregrounding how students’ literacy practices are “purposeful and embedded in broader social goals and cultural practices” (Barton & Hamilton, 2000, p.8). For example, the present study revealed that the graduate students saw artificial intelligence as a support tool, emphasized the need to evaluate AI-generated content critically, and selectively aligned it according to the task purpose through paraphrasing and using citations. These findings do not align with research showing that ChatGPT contributes to breaching

academic integrity rules and compromises students' critical thinking skills (Synekop et al., 2024; Ulla et al., 2023). Instead, the findings of the present study indicated that EFL graduate students' use of AI tools resulted in increased engagement with ethical considerations in academic writing, such as ensuring the authenticity and integrity of AI-assisted work and addressing issues of bias in AI-generated content (Lea & Street, 2006). The findings of the present study thus present an alternative viewpoint on plagiarism and students' use of digital resources, indicating that such resources often contributed to a superficial understanding of academic integrity, merely reducing it to a "technical issue of percentages of reproduced text" (Lea & Jones, 2011, p. 389). That is, the students' literacy practices encompassed ethical considerations such as proper citation practices, avoiding plagiarism, and upholding academic integrity. Thus, the findings suggest that, contrary to the concerns of teachers and researchers about students' misuse of AI to bypass academic integrity (Perkins, 2023), AI might actually create an opportunity for students to critically reflect on and reinforce their scholarly identities, thereby helping them to adhere to ethical practices valued at universities (Canagarajah, 2019; Lea & Street, 1998; Roozen & Erickson, 2017).

Third, the LSP perspective revealed how these EFL graduate students participated in AI-assisted collaborative literacy practices. The participants were hesitant to relinquish control to AI for writing tasks, preferring instead to maintain an active authorial presence in their work (Ivanič, 1998; 2006). Thus, the results highlighted that students engaged in collaborative writing with AI by incorporating it into various stages of writing, such as brainstorming, checking mechanics, increasing coherence and cohesion, organizing, brainstorming, and meaning-making. This finding is consistent with Su et al. (2023), who found that ChatGPT contributed "to the dialogical aspect of augmentative writing by exposing students to different perspectives. It functions at most as a knowledgeable peer

who is unfortunately not able to initiate conversations and guide thinking development” (p. 8). It was evident from the data that students collaborated with AI tools, which mediated new AI literacy practices associated with scholarly and academic writing conventions. An unexpected outcome was how AI writing tools contributed to developing graduate students’ writer identities and stances. For example, the findings suggested that AI writing tools developed the self-as-author writer identity, which refers to their authorial presence, and “voice” as the authority and originator of the content of written texts (Ivanič, 1998, p. 26). In contrast, previous literature merely showed that participants used a range of different digital tools in writing but did not elaborate on their AI usage as AI literacy practice or how AI can contribute to positive writing identities necessary for academic writing (Chan & Hu, 2023; Fyfe, 2022; Lea & Jones, 2011; Wu, 2015). In reality, AI can potentially promote positive writer identities by stimulating the cultivation of their discursal selves and facilitating negotiations surrounding the self-as-author identity within the socio-cultural and institutional contexts of university settings (Ivanič, 1998).

Overall, AI-based writing assistants helped students navigate institutional practices like academic integrity, shifting students’ focus from basic literacy skills to higher-order aspects of writing, and supporting multilingual students’ identity formation and equity. In addition, using AI resulted in the emergence of AI-informed research literacy practices, ethical AI-augmented literacy practices, and AI-assisted collaborative literacy practices.

#### **5.4 Conclusion**

This chapter discussed the study’s main findings, which revealed the advantages and challenges encapsulated in graduate students’ perspectives and experiences of using AI writing tools. The chapter also showed how the students navigated AI tools to embody the appropriate institutional community of practices and how this navigation contributed to their emerging AI-assisted literacy practices. Through these findings, the present study

demonstrates the significance of literacy as a social practice perspective, offering valuable insights into understanding how the socio-cultural context of universities shapes students' use of AI writing assistants and its implications for new literacies, academic writing pedagogy, and assessment (Barton, 2001; Ivanič, 2004; Street, 1984). The next chapter will conclude and summarize the key results, limitations, and recommendations.

## Chapter 6: Conclusion

The preceding chapter provided a thorough analysis and discussion of the main findings of the present study. As repeatedly stated throughout the thesis, this study explored how AI-based writing assistants shape the literacy practices of graduate students at one Kazakhstani EMI university and the implications of this for their academic writing. To investigate the phenomenon under study, the study formulated the following main research question and two sub-questions:

Main RQ: What literacy practices emerge when AI-based writing assistants inform graduate students' academic writing at one Kazakhstani EMI university?

Sub-question 1: What are students' perspectives and experiences of using AI for academic writing?

Sub-question 2: Why do students use AI-based writing assistants in writing?

This chapter presents the main conclusions of the present study about students' perspectives and experiences with AI-based writing assistants based on the qualitative questionnaire, two arts-based research tools (significant circles and image cards), and focus groups. It ends with a description of the limitations of this study, further implications, and recommendations for further studies.

### 6.1 Main Conclusions of the Study

This study was underpinned by literacy as a social practice theory (Barton, 2001; Ivanič, 2004; Street, 1984). Drawing on students' use of AI in literacy events enabled me to explore specific instances when students employed AI to facilitate different writing tasks and how the continuous integration of AI into the writing process influenced their literacy practices (Barton & Hamilton, 2000; Street, 2017). I also employed the information literacy for higher education (FILHE) framework (ACRL, 2016) to explore if

the students' use of AI writing tools demonstrated any of these information literacy frames.

The study demonstrated how the cultural context shaped students' employment of AI-based writing assistants and shed light on the evolving landscape of academic writing with AI. My application of literacy as social practice and FILHE revealed several key conclusions: 1) the benefits and limitations of AI; 2) students' reasons for using AI; and 3) emerging AI literacies.

### ***Benefits and Limitations of AI***

The benefits of AI reported by the participants were mainly associated with AI's help with navigating study skills, such as language mechanics and organization (Kikalishvili, 2023; O'Neill & Russell, 2019). Thus, the LSP perspective revealed that universities or instructors should be less worried about students' use of AI for study skills as they are "unlikely to be negatively affected" by AI writing assistants (Anson, 2024, p. 7). The LSP perspective also revealed that AI assistants promoted the students' socialization by contributing to the students' understanding of the community of practices (Lave & Wenger, 1991) by assisting with citation generation and referencing style. In addition, the LSP perspective illustrated AI's role in socialization by highlighting that it enabled the students to participate in and navigate scholarly discourses (Anson, 2024) by increasing their comprehension of the significance of evidence, academic honesty, and clarity in writing. Adopting the LSP perspective also helped to reveal that AI assistants facilitated positive student identities by increasing their confidence and acting as collaborative partners for writing (Chan & Hu, 2023; Fyfe, 2022).

However, the LSP perspective also revealed the students' negative experiences, which were related to skills-based literacies (overcorrection) and academic literacies (unreliability and potential overreliance) limitations. The LSP lens went beyond previous

studies which reported on broad disadvantages because students' negative AI perspectives and experiences, as a literacy practice, revealed that AI writing tools can facilitate students' critical reflection, transform and foster ethical scholarship, and shape scholarly identity. Thus, my findings demonstrate a need for universities to embrace the potential of AI in writing by guiding and supporting students in navigating and critically engaging with AI (Rothblatt, 2012).

### ***Reasons for Using AI Writing Tools***

The LSP lens allowed me to reveal how the graduate students' AI use was directly linked to and shaped by the social and cultural practices of their university, offering the students a space to navigate and make sense of the complex and often hidden social and institutional practices associated with academic writing. More specifically, the LSP perspective revealed that the students used AI for study skills purposes, to understand their academic community of practices, and to develop scholarly identities and voices.

First, regarding the study skills purposes (Lea & Street, 2006; Street, 2017), AI enabled the students to break language barriers, serving as "an empowering and inclusive tool" (Borger et al., 2023, p. 927). Second, the LSP lens highlighted that the graduate students used AI to navigate the institutional communities of practice. Thus, AI writing assistants functioned as a socialization tool into the scholarly discourses of academia (Anson, 2024). Using AI increased the graduate students' awareness of research as inquiry, of using information literacy strategies to understand the requirements of their assignments, to generate ideas, and to create organizational structures (Lea & Jones, 2011). Third, the study revealed that the students used AI writing assistants to navigate academic integrity and ethical academic writing. That is, the students used AI for scholarly writing and navigated the power relations associated with the academic integrity rule to project an image of ethical scholars (Dillon, 2024).

### *Emerging Literacy Practices*

The findings also highlight that AI writing assistants can shape emerging AI-assisted literacy practices. AI tools activated the students' autonomy, voice, and writer identity as they began to challenge the traditional power structures within academia. As a result, AI assistants can transform the dominance of traditional writing practices (Barton, 2001), highlighting the increasing visibility and influence of students' everyday literacies within academia (Barton & Hamilton, 2006; Lea & Street, 1998, 2006; Street, 2017).

Moreover, the LSP lens revealed the capacity for new literacies to emerge, such as AI-informed research literacy practices, ethical AI-augmented literacy practices, and AI-assisted collaborative literacy practices. Regarding the first of these, in this study, the graduate students approached research as an inquiry-driven process, employing AI assistants to investigate and collect information pertinent to their academic tasks, "matching information needs and search strategies to appropriate search tools" (ACRL, p. 22-23). Second, the students' literacy practices demonstrated their understanding of the value of information by "giving credit to the original ideas of others through proper attribution and citation," and the application of inquiry skills to their research, which includes the practice of "synthesizing ideas gathered from multiple sources" (ACRL, p. 18). Regarding ethical practices, despite concerns that AI can result in breaches of academic integrity (Perkins, 2023; Synekop et al., 2024; Ulla et al., 2023), the present study revealed that the graduate students saw artificial intelligence as a support tool, emphasizing the need to evaluate AI-generated content critically and selectively align it according to the task purpose through paraphrasing and using citations (Lea & Street, 2006). Finally, regarding collaborative literacy practices, in my study, the participants preferred to maintain an active authorial presence in their work (Ivanič, 1998; 2006). AI

acted as a knowledgeable peer, as the students engaged in collaborative writing with AI by integrating it into different stages of writing.

An unexpected finding was how AI writing tools contributed to developing graduate students' writer identities and stances, which has not been mentioned by previous studies on AI (Chan & Hu, 2023; Fyfe, 2022; Lea & Jones, 2011; Wu, 2015). For example, my study revealed that AI writing assistants helped to develop the self-as-author facet of a writer's identity, which refers to their authorial presence and voice (Ivanič, 1998). This suggests that AI might promote positive writer identities by helping to cultivate their discursal selves and facilitating negotiations surrounding the self-as-author identity within the socio-cultural and institutional contexts of university settings (Ivanič, 1998).

Overall, based on the LSP perspective, the findings of the present study highlight the role of AI writing assistants in facilitating students' study skills, socialization into academic communities of practice, and academic literacies. This lays the foundation for emerging AI-informed literacy practices in academic writing. The findings also show AI's role in fostering students' writer identities and voices.

## **6.2 Limitations of the Study**

Regarding the conclusions drawn from this study's findings, several limitations must be considered. One limitation of this study is its scope and design. The study gathered data from a relatively small and homogenous sample of Kazakhstani students: the experiences and perspectives of only eight graduate students were explored. Furthermore, this study used a case study design to look into the students' literacy practices at one highly selective, well-resourced EMI university in Kazakhstan that has a strong focus on ethical practices. Although this study confirmed the role of institutional values and practices, including practices related to ethics and plagiarism, in shaping the literacy practices of its students, generalizing the findings of the present study to other higher

education institutions would be problematic because of the specificity of the research site. Hence, future studies could examine how the institutional values and practices at other, less-resourced universities shape students' literacy practices. In addition, most of the participants were pursuing similar majors. Thus, a larger study could be conducted with students from different majors in order to gather more data that would allow for a comparative analysis of students' AI-informed literacy practices across different majors.

However, despite the limitations, the results of this study contribute to the body of knowledge on literacies by revealing the ways in which AI assistants shape students' new literacy practices in academic writing, and how institutional practices and socio-cultural contexts affect students' experiences and perspectives with AI. As a result, the findings have significant implications for understanding the dynamics of academic writing through the use of AI writing assistants within specific social and institutional contexts, foregrounding the importance of considering the literacy practices embedded within broader socio-cultural frameworks.

### **6.3 Implications of This Study and Recommendations**

Previous research has mainly focused on the technical aspects of writing, viewing it as a set of skills, thereby ignoring the role of AI technology as a literacy event that shapes students' literacy practices in academic writing (Barrot, 2021; Ebadi et al., 2022; Fan, 2023). Furthermore, most studies have been conducted in contexts outside of Central Asia and Kazakhstan (Kikalishvili, 2023; Lin & Chang, 2020; Vázquez-Cano et al., 2021). For this reason, the findings of the present study offer profound and novel insights into the transformative role of AI-based writing assistants in shaping the literacy practices of graduate students at one Kazakhstani EMI university. By adopting the LSP perspective, this research has revealed the dynamic interaction between AI technology and academic writing, including the emergence of new AI literacies and potential shifting power

dynamics within academia. Thus, the findings have implications for both the immediate context of language education and the future of higher education in Kazakhstan and beyond.

In addition, the present study employed arts-based research tools for data collection (image cards and significant circles), which, given the controversial topic of AI use in academic writing, created a safe space where the participants could reflect deeply on their AI experiences and share them. Thus, the study demonstrated the benefits of using arts-based research tools, thereby suggesting their value for future AI studies.

Overall, the LSP theoretical frame revealed a deeper understanding of students' experiences and use of AI for their academic writing:

- It bridged a gap in the existing literature because it shifted the focus from the technical aspects of AI writing assistants to their role within the broader context of literacy and social practices in academic writing. Emphasizing the intersection of AI technology with literacy practices offered new insights into how these tools shape the academic writing process and students' engagement with scholarly discourse.
- It contributed empirical evidence to the literature on AI writing assistants from an underrepresented context in previous research. The sample and research site consisted of graduate students at a Kazakhstani EMI university, which offered a unique perspective on how Kazakhstani students use and navigate AI technology in their academic writing within a specific cultural and educational context, essential for developing more inclusive and culturally relevant approaches to integrating AI tools into academic writing instruction.
- It revealed how graduate students navigate institutional practices that shaped their AI literacy practices, offering valuable insights for university educators,

policymakers, and curriculum developers that can inform the design of more effective writing instruction that leverages AI tools to enhance students' academic writing skills while addressing their diverse linguistic and cultural needs.

- It contributed to a deeper understanding of academic writing as a socially situated practice mediated by both technological and socio-cultural factors. Exploring students' AI use as literacy practices in specific sociocultural contexts provided valuable insights for educators, policymakers, and researchers seeking to promote ethical, inclusive, and culturally responsive approaches to academic writing instruction in the digital age.

To sum up, based on the results of the present study, five major implications can be offered. First, the results showed that AI writing assistants do not appear to pose challenges to the development of skill-based literacy such as language mechanics and sentence structuring. Thus, university instructors can safely incorporate AI into teaching mechanics. In addition, although this study did not confirm the expectation that AI might hinder students' socialization into scholarly discourses in academia (Anson, 2024), the positive effect of AI on literacy as socialization might be linked to participants being graduate students who had writing experience and academic maturity. Therefore, the second implication is that during the initial stages of university education, instructors should support students, especially undergraduates, in socializing into institutional writing norms and encourage them to engage in writing activities without relying on AI. These will allow students to develop foundational writing skills under the guidance of their instructors. In addition, universities should provide students with explicit instruction or encourage their active engagement with the information literacy frames for higher education, thereby teaching students how they can contribute to the ethical and responsible integration of AI into their writing practices.

Third, given that AI can shape students' identities as ethical scholars and facilitate critical reflection, instructors could incorporate AI into their pedagogy to offer sensemaking spaces for students where students can engage with their emerging scholarly voices.

Fourth, institutions should establish clear policies and guidelines for using AI writing assistants in order to promote inclusivity and enhance the quality of academic writing. Encouraging the adoption of AI within defined institutional frameworks can contribute to a more equitable learning environment. Moreover, assessment and assignment design should be adapted to leverage AI technologies in ways that assuage plagiarism-related concerns. Assignments should be structured to prioritize personalized, critically reflective writing that emphasizes students' meaning-making processes and ongoing learning. This approach might mitigate plagiarism concerns and foster a deeper understanding of academic writing as an iterative and collaborative process.

Fifth, policymakers can play a pivotal role in supporting the integration of AI writing assistants into academic writing instruction by providing essential resources and infrastructure. This includes financial support for acquiring AI tool subscriptions, training programs for educators and students to familiarize themselves with the technology, and ongoing technical assistance to ensure effective implementation.

### ***Recommendations***

Regarding the recommendations, based on the implications of this study, future studies should:

- Explore AI writing assistants' influence on undergraduate or school students' literacy practices to compare the result with findings for graduate students and make judgments about the importance of academic maturity in using AI.

- Examine how the institutional and ethical practices in other, less-resourced universities shape students' literacy practices as they use AI in academic writing.
- Investigate evidence-based practices and guidelines for incorporating AI technology into writing curricula to enhance students' writing skills, critical thinking abilities, and digital literacy competencies.
- Conduct longitudinal studies to track the evolving literacy practices of students over time as they engage with AI writing assistants to provide deeper insights into the long-term impact of AI technology on students' writing processes, academic identities, and ethical engagement with scholarly communication.
- Examine AI's integration into university scholarship of teaching and learning about the knowledge, skills, and resources necessary for professors to effectively integrate AI technology into their teaching practices and support students in developing their writing abilities, especially how instructors can teach students to successfully incorporate AI into their writing while maintaining academic integrity and critical thinking. In addition, future studies could focus on exploring the impact of integrating AI writing assistants on the pedagogical approaches in writing instruction.
- Explore how students negotiate their authorial identities, make informed decisions about AI-generated content, and develop metacognitive awareness of their writing strategies and goals.

## **6.5 Conclusion and Reflection**

To conclude, the present study revealed that AI writing assistants significantly impact graduate students' literacy practices in academic writing on the study skills, socialization, and academic literacy levels. However, it is important to consider the role of university values, traditions, and scholarly practices in shaping students' AI-mediated

literacy practices. Given that traditional literacy practices are being transformed, it is essential for universities to catch up with the changes to embrace the future. The findings indicate the transformative potential of AI tools in academic writing, offering valuable insights for teachers and policymakers to support students effectively in their writing.

Moving to my personal reflection, writing this thesis turned out to be challenging yet immensely rewarding. First, this experience extended my understanding of the importance of having theories that can explain everyday literacies and power issues that are often overlooked. Before learning about LSP, my research proposal was based on understanding literacy solely as a set of skills. After engaging more with LSP, I realized that being literate means much more than just having a good command of skills like grammar. This realization encouraged me to look at AI's impact on students' writing through the skill-based, academic socialization, and academic literacy points of view. I believe that the insights I gained while writing my thesis will guide my future research pursuits and motivate me to continue discovering how other technologies can shape students' literacy practices.

In addition, the thesis contributed to my methodological growth, as I used focus groups and especially arts-based tools, which enabled me to understand how less 'traditional' instruments can help reduce tension during interviews, encouraging participants to share rich data that might have been challenging to obtain otherwise. I was also able to understand better the principles of ethical engagement with participants while collecting the data.

At last, writing the thesis enabled me to participate in two scientific conferences, being able to share the insights I gained from my study with international and local researchers and receive valuable feedback that was beneficial for this thesis.

Overall, even though writing a thesis has been a very long process of constant reading, meaning-making, drafting, and rewriting, it has been a great opportunity for my professional and personal growth. I believe that the knowledge and experience I have gained during this journey will be helpful in my future research endeavors.

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## Appendix A: Completed AI Declaration Form



Thesis Title: Exploring Artificial Intelligence as a Literacy Practice: Graduate  
Students' Navigation of AI and Academic Writing

### Declaration of the USE of Generative AI

I hereby declare that I have read and understood NUGSE's policy concerning appropriate use of AI and composed this work independently (please check one):

- with the use of artificial intelligence tools, or  
 without the use of artificial intelligence tools.

---

(If you have used AI tools as defined in the GSE policy document, please complete the rest of this form.)

During the preparation of this thesis/examination, I used Grammarly and Scribbr  
[NAME of TOOL] to check for grammar and punctuation mistakes and to cite the  
references according to APA [REASON]<sup>1</sup>.

I also declare that I

- am aware of the capabilities and limitations of AI tool(s),  
 have verified that the content generated by AI systems and adopted by me is factually correct,  
 am aware that as the author of this thesis I bear full responsibility for the statements and assertions made in it,  
 have submitted complete and accurate information about my use of AI tools in this work, and  
 acknowledge that there may be disciplinary consequences if I have not followed NUGSE's guidelines regarding AI appropriate use.

---

<sup>1</sup> Examples of REASON: brainstorm ideas / find or select sources on a topic / paraphrase / structure and organize the written text / edit the text for clarity and grammar / ask for tips to improve coherence / cite and reference sources

Name: Zhanel Zakirova

Date: 31.05.2024

Signature: *Zakirova*

## Appendix B: AI-Based Writing Assistants Questionnaire

The purpose of the questionnaire is to explore the benefits and drawbacks of using AI-based writing assistants for academic writing.

Please answer ALL the questions. It will take you around 20 minutes to answer the questionnaire.

### 1. Personal Details

a. Please circle your age range.

- 20-30
- 30-40
- 40-50
- 50-60

b. Please indicate your confidence level in using the following languages on a scale of 1 to 5, where 1 stands for “Not confident at all” and 5 stands for “Extremely confident.”

Kazakh

1- not confident at all

2 - a little confident

3- moderately confident

4 - somewhat confident

5 - extremely confident

Russian

1- not confident at all

2 - a little confident

3- moderately confident

4 - somewhat confident

5 - extremely confident

c. Please specify the field of your postgraduate degree

- Humanities, Education, or Public Policy
- Digital technology or engineering
- Mining and Geosciences
- Medicine
- Business

d. Please indicate your English language proficiency level according to CEFR

- A1-A2 (beginner)
- B1-B2 (intermediate)
- C1-C2 (Advanced)

e. Please indicate your confidence in your academic writing skills on a scale of 1 to 5, where 1 stands for “not confident at all” and 5 stands for “extremely confident.”

1- not confident at all

2 - a little confident

3- moderately confident

4 - somewhat confident

5 - extremely confident

## **2. Students Experiences with AI-Based Writing Assistants**

1. How often do you use AI tools for academic writing?

- very rarely
- once or twice a month
- at least once a week
- daily
- multiple times a day

2. Which AI writing tools do you use? Please circle all tools that you use and feel free to provide your own options

- Grammarly
- ChatGPT
- QuillBotJenni AI
- Other tools (please specify which)\_\_\_\_\_

3. Think of one word that describes what AI means for you.

4. Have you noticed any features of AI writing tools that you find particularly useful? If yes, list the main useful features.

- 1.
- 2.
- 3.
- 4.
- 5.

5. Have you noticed any limitations or drawbacks of AI writing tools? If yes, list the main limitations or drawbacks.

- 1.
- 2.
- 3.
- 4.
- 5.

6. Have AI tools influenced the quality of your writing? If yes or no, please describe or explain how?

7. If AI tools affect the quality of your writing, does the effect remain when you do not use AI?

8. Did AI tools influence your engagement in writing tasks? If yes or no, please describe or explain how?
9. Do AI writing tools affect your individual learning? If yes or no, please describe or explain how?
10. What can be the benefits of using generative AI (ChatGPT and alike) in academic writing?
11. What can be the disadvantages of using generative AI (ChatGPT and alike) in academic writing?
12. Have you used AI corrective feedback tools like Grammarly? If yes, what do you like about its feedback? What do you dislike about its feedback?
13. Do you think your level of English (proficiency) affects the successful use of AI tools in writing? How?
14. Have you experienced any technical challenges while using AI writing assistants? Can you describe them?
15. Did AI tools influence your understanding of your writing issues? If yes or no, please describe or explain how?
16. How do you feel while writing with AI tools? What emotions do you feel when using AI tools?
17. Have you ever felt that you rely on AI writing tools too much?
18. Is the ethical use of AI writing tools possible? If yes, how do you make sure that using AI writing tools would not cause ethical issues?
19. Do you have any other comments or thoughts related to your experiences with AI writing tools that you would like to share?

**Thank you completing this questionnaire 😊**

## **Жасанды Интеллектке Негізделген Жазу Құралдары Бойынша Сауалнама**

Сауалнаманың мақсаты - академиялық жазу үшін жасанды интеллектке (ЖИ) негізделген жазу құралдарын пайдаланудың артықшылықтары мен кемшіліктерін зерттеу.

Барлық сұрақтарға жауап беруіңізді сұраймыз. Сауалнамаға жауап беру сіздің шамамен 20 минут уақытыңызды алады.

### **1. Жеке деректер**

**а. Жасыңыз нешеде?**

- 20-30 аралығында
- 30-40 аралығында
- 40-50 аралығында
- 50-60 аралығында

**б. Келесі тілдерді қолдануға деген сенімдігіңізді 1-ден 5-ке дейінгі шкала бойынша бағалаңыз, мұнда 1 “мүлдем сенімді емеспін”, ал 5 “өте сенімдімін” дегенді білдіреді.**

Қазақ тілі

1 - мүлдем сенімді емеспін

2 - аздап сенімдімін

3- орташа деңгейде сенімдімін

4- айтарлықтай сенімдімін

5- өте сенімдімін

Орыс тілі

1 - мүлдем сенімді емеспін

2 - аздап сенімдімін

3- орташа деңгейде сенімдімін

4- айтарлықтай сенімдімін

5- өте сенімдімін

**в. Магистрлік бағдарламаңыздың бағытын көрсетіңіз**

- Гуманитарлық ғылымдар, білім беру немесе мемлекеттік саясат
- Сандық технологиялар немесе инженерия
- Тау-кен және жер туралы ғылымдар
- Медицина
- Бизнес

**г. CEFR шкаласына сәйкес ағылшын тілін білу деңгейіңізді белгілеңіз.**

A1-A2 (жаңадан бастаушы)

B1-B2 (орта деңгей)

C1-C2 (жоғары деңгейде)

**д. Академиялық жазу дағдыларыңызға деген сенімділігіңізді 1-ден 5-ке дейінгі**

**шкала бойынша бағалаңыз, мұнда 1 “мүлдем сенімді емеспін”, ал 5 “өте сенімдімін”**

**дегенді білдіреді.**

1 - мүлдем сенімді емеспін

2 - аздап сенімдімін

3- орташа деңгейде сенімдімін

4- айтарлықтай сенімдімін

5- өте сенімдімін

**2. Студенттердің жасанды интеллектке негізделген жазу құралдарын пайдалану тәжірибесі**

1. Академиялық жазу үшін жасанды интеллектке (ЖИ) негізделген құралдарды қаншалықты жиі қолданасыз?

- өте сирек
- айына бір немесе екі рет
- кем дегенде аптасына бір рет
- күнделікті
- күніне бірнеше рет

2. Сіз қандай ЖИ-ке негізделген жазу құралдарын қолданасыз? Сіз қолданатын **барлық** құралдарды белгілеңіз және қажет болған жағдайда өз нұсқаларыңызды көрсетіңіз

- Grammarly
- ChatGPT
- QuillBot
- Jenni AI
- Басқа құралдар (қайсысын екенін көрсетіңіз) \_\_\_\_\_

3. Жасанды интеллект сіз үшін нені білдіреді? Бір сөзбен сипаттаңыз.

4. ЖИ-ке негізделген жазу құралдарының сізге әсіресе пайдалы болып көрінген қандай да бір қасиеттері болды ма? Егер бар болса, негізгі пайдалы қасиеттерін тізімдеңіз.

- 1.
- 2.
- 3.
- 4.
- 5.

5. Сіз ЖИ-ке негізделген жазу құралдардың шектеулерін немесе кемшіліктерін байқадыңыз ба? Олай болса, негізгі шектеулер немесе кемшіліктерді тізімдеңіз.

1.

2.

3.

4.

5.

6. ЖИ-ке негізделген құралдар сіздің жазу сапаңызға әсер етті ме? Егер әсер етсе, қалай әсер еткенін сипаттаңыз немесе түсіндіріңіз. Егер жоқ болса, неге екенін сипаттаңыз немесе түсіндіріңіз.

7. Егер ЖИ-ке негізделген құралдар сіздің жазу сапаңызға әсер етсе, ЖИ-ті пайдаланбаған кезде бұл әсер сақталады ма?

8. ЖИ-ке негізделген құралдар сіздің жазу тапсырмаларды орындауға деген ынтаңызға әсер етті ме? Егер әсер етсе, қалай әсер еткенін сипаттаңыз немесе түсіндіріңіз. Егер жоқ болса, неге екенін сипаттаңыз немесе түсіндіріңіз.

9. ЖИ-ке негізделген жазу құралдары сіздің жеке оқуыңызға әсер ете ме? Егер әсер етсе, қалай әсер еткенін сипаттаңыз немесе түсіндіріңіз. Егер жоқ болса, неге екенін сипаттаңыз немесе түсіндіріңіз.

10. Академиялық жазуда генеративті ЖИ-ті (ChatGPT және тағы басқа) қолданудың қандай артықшылықтары болуы мүмкін?

11. Академиялық жазуда генеративті Жи-ті (ChatGPT және тағы басқа) қолданудың қандай кемшіліктері болуы мүмкін?

12. Сіз Grammarly тәрізді редактор ЖИ құралдарын қолданып көрдіңіз бе?

Қолданған болсаңыз, оның кері байланысы сізге несімен ұнайды? Оның кері байланысы сізге несімен ұнамайды?

13. Сіздің ағылшын тілін білу деңгейіңіз жазуда ЖИ құралдарын сәтті қолдануға әсер етеді деп ойлайсыз ба? Қалай?
14. Сіз ЖИ-ке негізделген жазу құралдарын пайдалану кезінде қандай да бір техникалық мәселелерге тап болдыңыз ба? Сіз оларды сипаттай аласыз ба?
15. ЖИ құралдары сіздің жазуыңыздағы проблемалық аймақтарыңызды анықтауға септігін тигізді ме? Егер септігін тигізген болса, қалай әсер еткенін сипаттаңыз немесе түсіндіріңіз. Егер әсер етпесе, неге екенін сипаттаңыз немесе түсіндіріңіз.
16. ЖИ құралдарымен жазған кезде сіз өзіңізді қалай сезінесіз? ЖИ құралдарын пайдалану кезінде қандай эмоциялар пайда болады?
17. Сіз ЖИ-ке негізделген жазу құралдарына тым көп сенетіндігіңізді байқаған кездер болды ма?
18. ЖИ жазу құралдарын этикалық түрде қолдану мүмкін бе? Олай мүмкін болса, ЖИ жазу құралдарын пайдалану этикалық мәселелерді тудырмайтынына қалай көз жеткізесіз?
19. Сізде ЖИ жазу құралдарымен тәжірибеңізге қатысты бөліскіңіз келетін басқа пікірлер немесе ойлар бар ма?

**Сауалнамаға жауап бергеніңіз үшін рахмет 😊**

## **Опрос на Тему Инструменты для Письма Основанные на Искусственном Интеллекте**

Цель анкеты - изучить преимущества и недостатки использования инструментов для письма основанных на искусственном интеллекте для академического письма.

Пожалуйста, ответьте на ВСЕ вопросы. Вам потребуется около 20 минут, чтобы пройти опрос.

### **1. Личные данные**

**а.** Пожалуйста, укажите свою возрастную категорию.

- 20-30
- 30-40
- 40-50
- 50-60

**б.** Укажите свой уровень уверенности в использовании следующих языков по шкале от 1 до 5, где 1 означает “совсем не уверен”, а 5 означает “чрезвычайно уверен”.

Казахский язык

1- совсем не уверен

2 - немного уверен

3- умеренно уверен

4 - достаточно уверен

5 - чрезвычайно уверен

Русский язык

1- совсем не уверен

2 - немного уверен

3- умеренно уверен

4 - достаточно уверен

5 - чрезвычайно уверен

в. Укажите направление своей магистерской программы

- Гуманитарные науки, образование или государственная политика
- Цифровые технологии или инженерия
- Горное дело и науки о земле
- Медицина
- Бизнес

г. Укажите ваш уровень владения английским языком в соответствии с CEFR

- A1-A2 (начинающий)
- B1-B2 (промежуточный уровень)
- C1-C2 (продвинутый)

д. Укажите, свой уровень уверенности в своих навыках академического письма по шкале от 1 до 5, где 1 означает “совсем не уверен”, а 5 означает “чрезвычайно уверен”.

1- совсем не уверен

2 - немного уверен

3- умеренно уверен

4 - достаточно уверен

5 - чрезвычайно уверен

**2. Опыт работы студентов в использовании инструментов для письма основанных на искусственном интеллекте**

1. Как часто вы используете инструменты ИИ для академического письма?

- очень редко

- один или два раза в месяц
- по крайней мере раз в неделю
- ежедневно
- несколько раз в день

2. Какие инструменты ИИ для письма вы используете? Пожалуйста, обведите **все** инструменты, которые вы используете, и, при надобности, укажите свои собственные варианты

- Grammarly
  - ChatGPT
  - QuillBotJenni AI
  - Другие инструменты (пожалуйста, укажите, какие)
- 

3. Опишите одним словом что для вас значит ИИ.

4. Заметили ли вы какие-либо свойства инструментов ИИ для письма, которые кажутся вам особенно полезными? Если да, перечислите основные полезные свойства.

- 1.
- 2.
- 3.
- 4.
- 5.

5. Заметили ли вы какие-либо ограничения или недостатки инструментов ИИ для письма? Если да, перечислите основные ограничения или недостатки.

- 1.

- 2.
- 3.
- 4.
- 5.

6. Повлияли ли инструменты использующие ИИ на качество вашего письма? Если да, опишите или объясните, каким образом? Если нет, опишите или объясните, каким образом?

7. Если инструментов ИИ влияют на качество вашего письма, сохраняется ли этот эффект, когда вы не используете искусственный интеллект?

8. Повлияли ли инструменты ИИ на вашу вовлеченность в выполнении письменных заданий? Если да, опишите или объясните, каким образом? Если нет, опишите или объясните, каким образом?

9. Влияют ли инструментов ИИ для письма на ваше индивидуальное обучение? Если да, опишите или объясните, каким образом? Если нет, опишите или объясните, каким образом?

10. Каковы могут быть преимущества использования генеративного ИИ (ChatGPT и тому подобные) в академическом письме?

11. Каковы могут быть недостатки использования генеративного ИИ (ChatGPT и тому пободные) в академическом письме?

12. Использовали ли вы ИИ инструменты которые дают корректирующую обратную связь (например, Grammarly)? Если да, то что вам нравится в его отзывах? Что вам не нравится в его отзывах?

13. Считаете ли вы, что ваш уровень владения английским языком влияет на успешное использование инструментов ИИ в письме? Как?

14. Сталкивались ли вы с какими-либо техническими проблемами при использовании инструментов ИИ для письма? Можете ли вы их описать?
15. Повлияли ли инструменты ИИ на ваше понимание своих проблемных зон в письме? Если да, опишите или объясните, каким образом? Если нет, опишите или объясните, каким образом?
16. Что вы чувствуете, когда пишете с помощью инструментов ИИ? Какие эмоции вы испытываете при использовании инструментов ИИ?
17. Чувствовали ли вы когда-нибудь, что слишком полагаетесь на инструменты ИИ для письма?
18. Возможно ли этическое использование инструментов ИИ для письма? Если да, то как вы удостоверитесь, что использование инструментов ИИ для письма не вызовет этических проблем?
19. Есть ли у вас какие-либо другие комментарии или мысли, связанные с вашим опытом работы с инструментами ИИ для письма, которыми вы хотели бы поделиться?

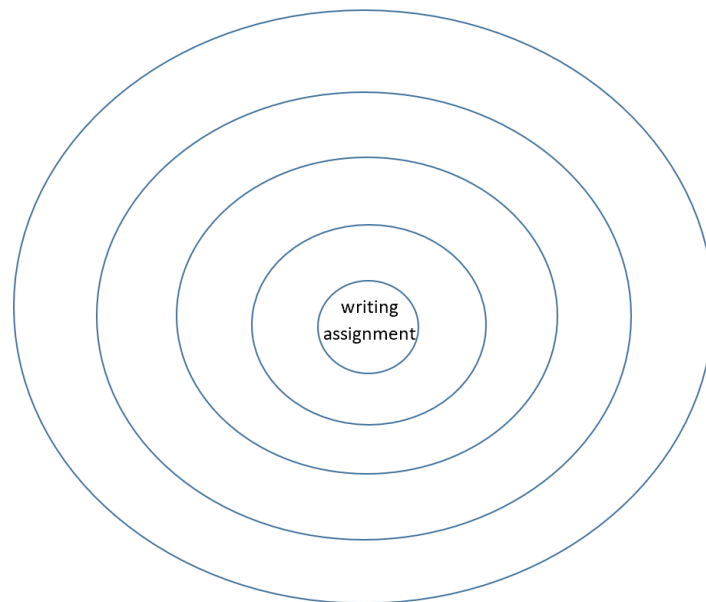
**Спасибо, что прошли данный опрос 😊**

## Appendix B: Significant Circles

Date:

Participant:

Dear participant, in the center of this circle, you are given a certain academic writing assignment. Please fill the outer circles describing the steps you take in order to complete this assignment. In other words, starting from the biggest outer circle and moving to the inner circle, please describe how you use AI (the process) in this assignment. Then please explain/reflect on your answers/steps in the textbox provided below the circle.

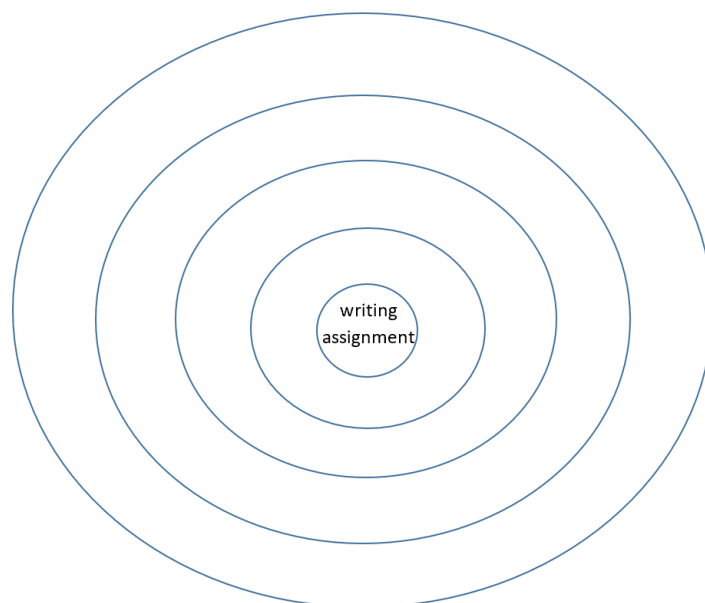


## Маңыздылық Шеңбері

Күні:

Қатысушы:

Құрметті қатысушылар, осы шеңбердің ортасында қандай да бір жазу тапсырмасы орналасқан. Осы тапсырманы орындау үшін қандай қадамдар жасайтыныңызды сыртқы шеңберлерге жазып толтырыңыз. Басқаша айтқанда, ең үлкен сыртқы шеңберден бастап, ішкі шеңберге дейін, осы тапсырманы жазу процесінде жасанды интеллектті қалай қолданатыныңызды сипаттап жазыңыз. Содан кейін төмендегі мәтін жолағында жауаптарыңызды/қадамдарыңызды түсіндіріңіз.



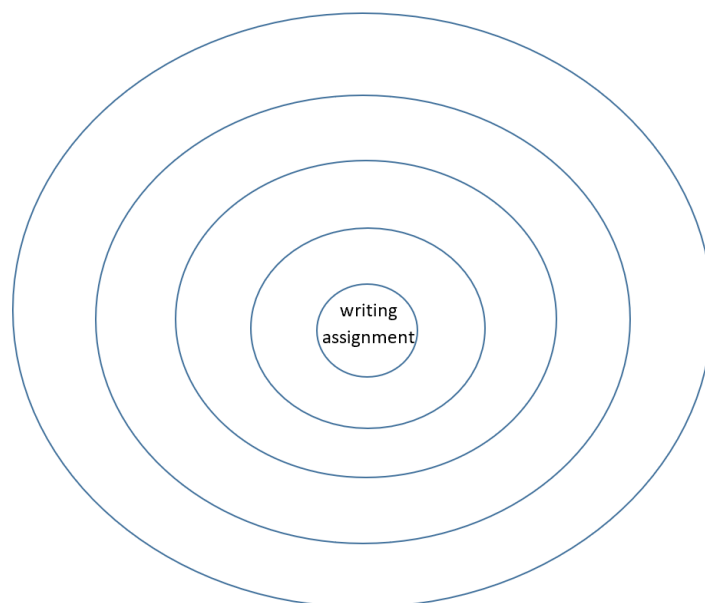
|  |
|--|
|  |
|--|

## Круг Значимости

Дата:

Участник:

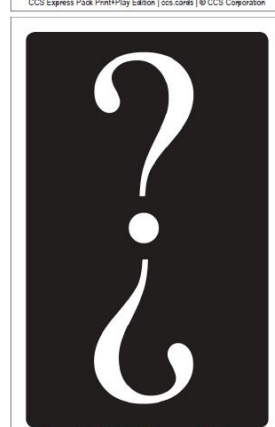
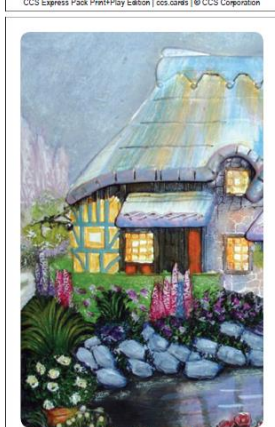
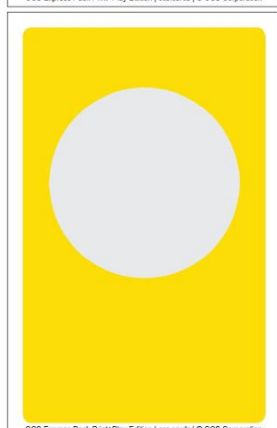
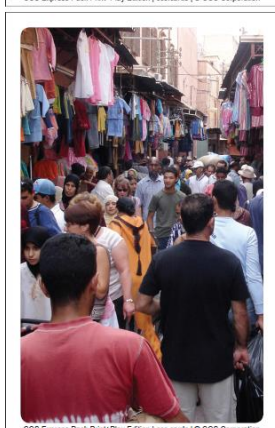
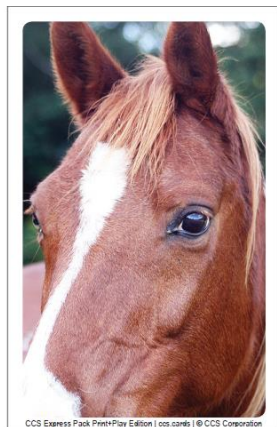
Уважаемые участники, в центре этого круга расположено какое-либо письменное задание. Пожалуйста, заполните внешние круги, описав шаги, которые вы предпримете, чтобы выполнить это задание. Другими словами, начиная с самого большого внешнего круга и переходя к внутреннему, пожалуйста, опишите, как вы используете искусственный интеллект процессе написания этого задания. Затем, пожалуйста, объясните свои ответы/шаги в текстовом поле, расположенном ниже.



## Appendix C: Samples of Image Cards

### Суреттері Бар Карточкалардың Үлгілері

### Образцы Карточек с Изображениями



## **Appendix D: Focus Group Interview Protocol**

### Artificial Intelligence as a Social and Literacies Practice: Graduate Students' Academic Writing Experiences

Time of interview:

Date:

Place:

Interviewer: Zhanel Zakirova

Interviewees:

2) Introductions a.

First, introduce yourself and the image you chose that depicts your experience with AI.

Please also share why you agreed to participate in this study.

1.

2.

3.

4.

5.

#### **Questions:**

a. Can you describe one example of when you used AI tools in your academic writing?

Probes: Can you describe the specific ways in which you use AI tools in your academic writing? Do you use them for paraphrasing, grammar checking, formatting, generating ideas, summarizing, or any other way? Do you modify the output? If yes, in what ways?

2. Can you describe any event or assignment when you were confused or did not trust the suggestions - why did it make you uneasy, what did you do and what did you learn about the use of AI in your academic writing assignments

Probes: What do you do if the output or feedback is not trustable?

3. Are there any tips or strategies you use for maximizing the benefits of AI tools in your writing tasks?
3. Many instructors seem to be concerned about the ethical issues associated with the use of AI in academic writing. What is your response to such concerns and can you provide any example where you felt your academic writing practice was unethical?

Probes: How do you ensure the ethical use of AI?

5. Are there any examples of new academic skills that you learned as a result of AI?
5. What do you think about the role of AI tools in writing in the future?

Probes: Do you think learning how to write with AI will be useful in future? Will your writing change in the future because of using AI? How?

**3) Wrap-Up a. Is there anything else you would like to note?**

**b. I do not have any more questions. Thank you for your time.**

## Фокус-Топпен Сұхбат Хаттамасы

### Жасанды Интеллект Әлеуметтік Және Сауаттылық Практикасы Ретінде:

#### Магистранттардың Академиялық Жазудағы Тәжірибесі

Сұхбат уақыты:

Күні:

Орны:

Сұхбат алушы: Закирова Жанель

Сұхбат берушілер:

#### 2) Кіріспе а.

Алдымен өзіңізді және өзіңіз таңдаған сіздің жасанды интеллектпен тәжірибеңізді сипаттайтын суретіңізді таныстырыңыз. Неліктен осы зерттеуге қатысуға келіскеніңізді бөлісіңіз.

- 1.
- 2.
- 3.
- 4.
- 5.

#### Сұрақтар:

а. Академиялық жазуда жасанды интеллект құралдарын қалай қолданғаныңыздың бір мысалын бере аласыз ба?

Нақтылау сұрақтары: Академиялық жазуыңызда жасанды интеллект құралдарын нақты қалай қолданатындығыңызбен бөлісе аласыз ба? Сіз оларды мәтінді басқа сөзбен айту үшін, грамматиканы тексеру, пішімдеу, идея өндіру, қысқаша мазмұндау немесе басқа жолмен қолданасыз ба? Сіз жасанды интеллект құралдары беретін жауаптар/кеңестерге өзгерістер енгізесіз бе? Егер енгізетін болсаңыз, қалай?

ә. Сіз жасанды интеллект берген кеңестерді түсінбеген немесе оларға сенбеген кезіңізді немесе қай тапсырма орындау кезінде болғанын сипаттай аласыз ба - жасанды интеллекттің кеңестері сізді неге алаңдатты, сіз бұл мәселені қалай шештіңіз және академиялық жазу тапсырмаларында жасанды интеллектті пайдалану туралы не үйрендіңіз?

Нақтылау сұрақтары: жасанды интеллекттің тұжырымдарына немесе кеңестеріне сену мүмкін болмаса, сіз қалай әрекет етесіз?

б. Өз академиялық жазуыңызда жасанды интеллект құралдарының артықшылықтарын барынша пайдалану үшін қолданатын қандай да бір кеңестер немесе стратегияларыңыз бар ма?

в. Көптеген мұғалімдерде академиялық жазуда жасанды интеллектті қолданумен байланысты этикалық сұрақтар туындайтын сияқты. Осы алаңдаушылықтар туралы сіздің пікіріңіз қандай және сіздің академиялық жазу тәжірибеңіз этикалық емес деп ойлаған кезге бір мысал келтіре аласыз ба?

Нақтылау сұрақтары: Жасанды интеллекттің этикалық түрде қолдатыныңызға қалай көз жеткізесіз?

г. Жасанды интеллектті қолдану нәтижесінде үйренген жаңа академиялық дағдыларыңызға мысал келтіре аласыз ба?

д. Жазуға арналған жасанды интеллект құралдарының болашақтағы рөлі туралы не ойлайсыз?

Нақтылау сұрақтары: Болашақта жасанды интеллектті қолданып жаза білу пайдалы болады деп ойлайсыз ба? Болашақта сіздің жазуыңыз жасанды интеллектті қолдану нәтижесінде өзгереді деп ойлайсыз ба? Егер өзгерсе, қалай?

**3) Қорытындылау а.** Сіз атап өткіңіз келетін тағы бір нәрсе бар ма?

б. Менде басқа сұрақ жоқ. Уақыт бөлгеніңіз үшін рахмет.

## Протокол Интервью с Фокус-Группой

Искусственный интеллект как социальная практика и практика грамотности: опыт магистрантов в академическом письме

Время проведения интервью:

Дата:

Место:

Интервьюер: Закирова Жанель

Опрошенные:

### 2) Введение а.

Для начала, представьте себя и изображение, которое вы выбрали и которое отражает ваш опыт работы с искусственным интеллектом. Расскажите, почему вы согласились принять участие в данном исследовании.

- 1.
- 2.
- 3.
- 4.
- 5.

### Вопросы:

а. Можете ли вы описать один пример того, как вы использовали инструменты искусственного интеллекта в своей академической работе?

Уточняющие вопросы: Можете ли вы описать конкретные способы того, как вы используете инструменты искусственного интеллекта в своем академическом письме? Используете ли вы их для перефразирования, проверки грамматики, форматирования, генерации идей, кратких изложений или каким-либо другим

способом? Вносите ли вы изменения в ответы/подсказки ИИ? Если да, то какими способами?

б. Можете ли вы описать какое-либо событие или задание, когда вы были сбиты с толку или не доверяли подсказкам ИИ - почему это вызвало у вас беспокойство, как вы поступили и что вы узнали об использовании искусственного интеллекта в ваших заданиях по академическому письму?

Уточняющие вопросы: Как вы поступаете, если выводам или подсказкам искусственного интеллекта нельзя доверять?

в. Есть ли какие-либо советы или стратегии, которые вы используете для максимального использования преимуществ инструментов искусственного интеллекта в вашем академическом письме?

г. Многие преподаватели, похоже, обеспокоены этическими проблемами, связанными с использованием искусственного интеллекта в академическом письме. Каково ваше мнение на счет подобных опасений и можете ли вы привести какой-либо пример, когда, по вашему мнению, ваша практика академического письма была неэтичной?

Уточняющие вопросы: Как вы обеспечиваете этическое использование искусственного интеллекта?

д. Есть ли какие-либо примеры новых академических навыков, которые вы обрели в результате использования искусственного интеллекта?

е. Что вы думаете о роли инструментов искусственного интеллекта для письма в будущем?

Уточняющие вопросы: Как вы думаете, будет ли полезно в будущем умение писать с помощью искусственного интеллекта? Изменится ли ваше письмо в будущем из-за использования искусственного интеллекта? Как?

**3) Подведение итогов а.** Есть ли что-нибудь еще, что вы хотели бы отметить?

б. У меня больше нет вопросов. Спасибо вам за уделенное время.

## **Appendix E: Recruitment Letter**

Dear Program Director's Name.

My name is Zhanel Zakirova, and I am a second-year student at Nazarbayev University Graduate School of Education conducting my research in order to fulfill the requirements for a Master of Arts degree. My research focuses on graduate students' experiences with using AI writing tools for academic writing. I hope you can assist me in distributing this email to students within your program.

I am inviting graduate students who have experience with AI writing tools to participate in my study. There will be a questionnaire, an arts-based research activity, and a focus group interview. The participation will take approximately 70-85 minutes overall. I will send another email as a reminder next week to ensure that you have received my email, thank you for your understanding. If you're willing to assist in this crucial study, I kindly request that you send the following information via email to all students enrolled in your graduate program.

### **The email to the graduate students**

To graduate students: Dear Graduate Students,

Do you have experience with using AI writing tools for academic writing? If yes, I offer you to take part in a vital research study that is unique for the Kazakhstani context. You are invited to participate in a questionnaire, arts-based research activity and a focus group interview, which will be conducted on different days and take around 70-85 minutes of your time overall. If you prefer, you can also choose an individual interview instead of participating in a focus group. The information you provide will help to understand how AI writing tools shape students' literacies in Kazakhstan. Your name, major, or year of study will not be included in the study and your participation will not affect your studies in any way.

You can contact me through my personal email, Whatsapp, or Telegram which are provided below. The purpose of this qualitative study, i.e. using a questionnaire, focus groups and arts-based research activity, is to understand how students use AI writing tools in Kazakhstan. Understanding students' experiences with AI tools might affect teachers' understanding of AI writing tools as they will get an opportunity to understand the issue from students' perspective. This, in turn, might affect their teaching writing practice. In addition, free coffee and snacks will be provided during the focus groups.

Please use my personal email, Whatsapp, or Telegram number to contact me:

[zhanel.zakirova@gmail.com](mailto:zhanel.zakirova@gmail.com)

+77052089835

## Шақыру Хаты

Құрметті бағдарлама директорының аты,

Менің атым Закирова Жанель және мен Назарбаев Университетінің Жоғары Білім Беру Мектебінің екінші курс студентімін. Мен магистр дәрежесін алуға қойылатын талаптарды орындау мақсатында зерттеу жүргізудемін. Менің зерттеуім магистранттардың академиялық жазу үшін жасанды интеллект құралдарын пайдалану тәжірибесін түсінуге бағытталған. Сіз маған осы электрондық хатты студенттерге таратуға көмектесе аласыз деп үміттенемін.

Мен жасанды интеллектке негізделген жазу құралдарымен тәжірибесі бар магистранттарды менің зерттеуіме қатысуға шақырамын. Зерттеу жұмысы аясында сауалнама, өнерге негізделген зерттеу әдісінің тапсырмасы және фокус-топтың сұхбаттары жүргізіледі. Жалпы, зерттеуге қатысу шамамен 70-85 минутқа созылады. Келесі аптада менің электрондық хатымды алғаныңызға көз жеткізу үшін тағы бір электрондық хатты еске салғыш ретінде жіберемін. Түсіністікпен қарайсыз деп үміттенемін. Егер сіз осы маңызды зерттеуге көмектесуге келіссеңіз, мен сіздің бағдарламаңызда оқитын барлық студенттерге келесі ақпаратты электрондық пошта арқылы жіберуді сұраймын.

### Магистранттарға электрондық хат

Магистранттарға: Құрметті магистранттар,

Сізде академиялық жазу үшін жасанды интеллект құралдарын қолдану тәжірибесі болды ма? Егер бар болса, мен сізге қазақстандық контекст үшін бірегей болып табылатын ғылыми зерттеуге қатысуды ұсынамын. Сіздерді сауалнамаға, өнерге негізделген зерттеу әдісінің тапсырмасына және фокус-топ сұхбатына қатысуға шақырамын. Бұл іс-шаралар әр түрлі күндерде өтеді және сіздің уақытыңыздың шамамен 70-85 минутын алады. Сіздің қалауыңыз бойынша, фокус-

топқа қатысудың орнына жеке сұхбатқа қатысуды таңдай аласыз. Сіз ұсынған ақпарат жасанды интеллектке негізделген жазу құралдары Қазақстанда студенттердің сауаттылығын қалай қалыптастыратынын түсінуге көмектеседі. Сіздің атыңыз, мамандығыңыз немесе оқу жылыңыз зерттеуде көрсетілмейді және сіздің қатысуыңыз сіздің оқу үлгеріміңізге ешқандай әсер етпейді.

Төменде көрсетілген жеке электрондық поштам, Whatsapp немесе Telegram арқылы менімен байланыса аласыз. Бұл сапалы зерттеудің мақсаты, яғни сауалнаманы, фокус-топтарды және өнерге негізделген зерттеу әдісінің тапсырмасын пайдалана отырып, Қазақстандағы студенттердің жасанды интеллектке негізделген жазу құралдарын қалай пайдаланатынын түсіну болып табылады. Оқушылардың жасанды интеллект құралдарымен жұмыс істеу тәжірибесін түсіну мұғалімдердің жасанды интеллектке негізделген жазу құралдарын түсінуіне әсер етуі мүмкін, өйткені олар мәселені оқушылардың көзқарасы арқылы түсінуге мүмкіндік алады. Бұл өз кезегінде олардың жазуды үйрету тәжірибесіне әсер етуі мүмкін. Сонымен қатар, фокус-топтарды өткізу кезінде тегін кофе мен снектер ұсынылады.

Менімен байланысу үшін жеке электрондық поштамды, Whatsapp немесе Telegram пайдаланыңыз:

zhanel.zakirova@gmail.com

+77052089835

## Письмо-Приглашение

Уважаемый имя директора программы.

Меня зовут Закирова Жанель, и я студентка второго курса Высшей Школы Образования Назарбаев университета. Я провожу свое исследование с целью выполнения требований для получения степени магистра. Мое исследование сосредоточено на опыте магистрантов в использовании инструментов искусственного интеллекта для академического письма. Я надеюсь, что вы сможете помочь мне распространить это электронное письмо среди студентов вашей программы.

Я приглашаю магистрантов, имеющих опыт работы с инструментами для письма основанными на искусственном интеллекте, принять участие в моем исследовании. В рамках исследования будут проведены опрос, деятельность исследовательского метода основанного на искусстве, и интервью фокус-группы. В целом участие займет примерно 70-85 минут. Я отправлю еще одно электронное письмо в качестве напоминания на следующей неделе, чтобы убедиться, что вы получили мое электронное письмо. Спасибо за ваше понимание. Если вы готовы помочь в этом важном исследовании, я убедительно прошу вас отправить следующую информацию по электронной почте всем студентам, обучающимся в вашей программе.

### Электронное письмо магистрантам

Магистрантам: Уважаемые магистранты,

Был ли у вас опыт использования инструментов искусственного интеллекта для академического письма? Если да, то я предлагаю вам принять участие в важном научном исследовании, уникальном для казахстанского контекста. Вам предлагается принять участие в анкетировании, исследовательской деятельности, основанной на

искусстве, и интервью в фокус-группе, которые будут проводиться в разные дни и в целом займут около 70-85 минут вашего времени. Согласно вашему предпочтению, вы также можете выбрать индивидуальное собеседование вместо участия в фокус-группе. Предоставленная вами информация поможет понять, как инструменты для письма основанные на искусственном интеллекте формируют грамотность студентов в Казахстане. Ваше имя, специальность или год обучения не будут включены в исследование, и ваше участие никоим образом не повлияет на вашу учебу.

Вы можете связаться со мной через мою личную электронную почту, Whatsapp или Telegram, которые указаны ниже. Цель этого качественного исследования, т.е. с использованием опроса, фокус-групп и деятельности, основанной на искусстве, состоит в том, чтобы понять, как студенты используют инструменты для письма основанные на искусственного интеллекте в Казахстане. Понимание опыта работы учащихся с инструментами искусственного интеллекта может повлиять на понимание преподавателями инструментов для письма основанных на искусственном интеллекте, поскольку они получают возможность разобраться в проблеме с точки зрения учащихся. Это, в свою очередь, может повлиять на их практику преподавания письменной речи. Кроме того, во время проведения фокус-групп будут предоставляться бесплатный кофе и закуски. Пожалуйста, используйте мою личную электронную почту, Whatsapp или Telegram, чтобы связаться со мной:

zhanel.zakirova@gmail.com

+77052089835

## **Appendix F: Informed Consent Forms**

### **Exploring Artificial Intelligence as a Literacy Practice: Graduate Students'**

#### **Navigation of AI and Academic Writing**

**DESCRIPTION:** You are invited to take part in a research study on the experiences of Kazakstani graduate students' use of artificial intelligence tools in their academic writing, undertaken by Zhanel Zakirova, NUGSE MA program student. The purpose of this study is to explore how AI writing tools shape the literacy practices of graduate students and their implications for their academic writing. If you agree to participate in the study, you will be required to draw a significant circle, complete a questionnaire, and participate in a focus group interview. If you prefer, you can also choose an individual interview instead of participating in the focus group. During the interviews, conversations will be audio-recorded. If you refuse to be recorded, written notes will be taken.

Confidentiality will be ensured regarding any information gained by the end of the interview. Your name will not be included in the study and you will be given participant codes instead. To ensure confidentiality, electronic data will be stored in a password-secured laptop, while the hardcopy materials will be stored in a key-locked drawer. Only the researcher and the research supervisor will have access to the data. The final draft of the thesis will not contain any material that can inadvertently reveal your identity. After the study is finished, all interview recordings, notes, questionnaire forms, and consent forms will be deleted.

**TIME INVOLVEMENT:** Your participation in this study will approximately take 70-85 minutes of your time. Considering your schedule, you can fill out the significant circle and the questionnaire at the time and place that are convenient to you. Focus groups will be scheduled for the time that is convenient for all participants. The significant circle will take no more than 20 minutes of your time. In addition, the questionnaire should take

approximately 20 minutes and the focus group interviews are planned to last for approximately 30-45 minutes.

**RISKS AND BENEFITS:**

This study carries minimal risks for the participants. The researcher will not collect any identifiable information during the study, including your name, surname, exact age, address, year of study or major. Other potentially identifiable data gathered during the study will not be revealed to the administration of the university, members of the faculty, staff or any external parties. There are no other foreseen risks associated with your participation in this study. If you withdraw your participation, the data you provided will be deleted.

The potential benefits that you might reasonably expect include the opportunity to share your experience in a research study that is unique for the Kazakhstani context, and gain fresh insights about the use of AI for academic writing. The current study is expected to provide insights into how AI affects students' literacies and the benefits and drawbacks of writing with AI, which might offer recommendations for improving teaching writing strategies. Your choice regarding whether to take part in this study or not will have no impact on your academic standing.

**PARTICIPANT'S RIGHTS:**

Your participation is voluntary and you have the right to withdraw your consent or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. The alternative is not to participate. You have the right to refuse to answer particular questions. The results of this research study will be used for writing a Master thesis and may also be presented at scientific or professional meetings or published in scientific journals. If you have any questions or need a copy of the findings from this

study, please feel free to reach out to me via the email address or phone number provided below.

**CONTACT INFORMATION:**

**Questions:** If you have any questions, concerns or complaints about this research, its procedures, risks and benefits, contact the Master's Thesis Supervisor for this student work, Michelle Bedeker, michelle.bedeker@nu.edu.kz, or the researcher, Zhanel Zakirova, zhanel.zakirova@nu.edu.kz, +77024753656.

**Independent contact:** If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact the NUGSE Research Committee to speak to someone independent of the research team at +7 7172 709359. You can also write an email to the NUGSE Research Committee at gse\_researchcommittee@nu.edu.kz

Please sign this consent form if you agree to participate in this study.

- I have carefully read the information provided;
- I confirm that I am 18 or I am elder than 18;
- I have been given full information regarding the purpose and procedures of the study;
- I understand how the data collected will be used, and that any confidential information will be seen only by the researchers and will not be revealed to anyone else;
- I understand that I am free to withdraw from the study at any time without giving a reason;
- With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**The extra copy of this signed and dated consent form is for you to keep.**

## Ақпараттандырылған Келісім Формасы

### Жасанды Интеллектті Сауаттылық Практикасы Ретінде Зерттеу:

#### Магистранттардың ЖИ мен Академиялық Жазуда Бағдар Алуы

**СИПАТТАМА:** Сіз жасанды интеллект құралдарын академиялық жазуда пайдаланудағы қазақстандық магистранттардың тәжірибесін тануға арналған НУ ЖББМ магистрлік бағдарламасының студенті Закирова Жанель өткізетін зерттеу жұмысына қатысуға шақырылдыңыз. Бұл зерттеу жұмысының мақсаты - жасанды интеллектке негізделген жазу құралдары магистранттардың сауаттылық практикасына қалай әсер ететіндігін, сондай-ақ осы құралдардың студенттердің академиялық жазуына әсерін түсіну. Егер сіз зерттеу жұмысына қатысуға келіссеңіз, сізге маңыздылық шеңберін салу, сауалнамаға және фокус-топтың сұхбатына қатысу қажет болады. Сіздің қалауыңыз бойынша, сіз фокус-топ сұхбатына қатысудың орнына жеке сұхбатқа қатысуға ерік білдіре аласыз. Сұхбат барысында әңгімелер диктофонға жазылады. Егер сіз әңгіменің диктофонға жазылуын қаламасаңыз, зерттеуші қолдан жазбалар жасайтын болады. Сұхбат нәтижесінде алынған кез келген ақпаратқа қатысты құпиялылық қамтамасыз етіледі. Сіздің атыңыз зерттеу жұмысында аталмайды және оның орнына арнайы код қолданылатын болады. Құпиялылықты қамтамасыз ету үшін электрондық деректер құпия сөзбен қорғалған ноутбукта сақталады, ал қағаз материалдары құлыпталған тартпада сақталатын болады. Деректерге тек зерттеуші және оның ғылыми жетекшісі қол жеткізе алатын болады. Диссертацияның соңғы нұсқасында сіздің тұлғаңызды әшкерелейтін материалдар болмайды. Зерттеу аяқталғаннан кейін барлық сұхбат жазбалары, жазбалар, сауалнамалар және келісім формалары жойылатын болады.

**ҚАТЫСУ УАҚЫТЫ:** Сіздің осы зерттеу жұмысына қатысуыңыз шамамен 70-85 минут уақытыңызды алады. Маңыздылық шеңбері 20 минуттан аспайтын уақыт

алады. Сонымен қатар, сауалнама шамамен 20 минут алады және фокус-топ сұхбаттарының шамамен 30-45 минутқа созылуы жоспарланған.

**ТӘУЕКЕЛДЕР МЕН АРТЫҚШЫЛЫҚТАР:** осы зерттеуге қатысумен байланысты тәуекелдер минималды. Зерттеу барысында зерттеуші сіздің тұлғаңызбен сәйкестендіріле алатын ақпаратты, оның ішінде атыңызды, тегіңізді, нақты жасыңызды, мекен-жайыңызды, оқу жылыңызды, немесе мамандығыңыз туралы ақпаратты жинамайды. Зерттеу барысында жиналған басқа сәйкестендірілуі ықтимал деректер университет әкімшілігіне, факультет мүшелеріне, қызметкерлерге, немесе бөгде адамдарға ашылмайды. Күнтізбеңізге байланысты сіз өзіңізге ыңғайлы кез келген уақыт пен жерде маңыздылық шеңбері мен сауалнаманы толтыра аласыз. Фокус-топтар барлық қатысушыларға ыңғайлы уақытқа жоспарланатын болады. Осы зерттеуге қатысуыңызға байланысты басқа тәуекелдер болжанбаған. Егер сіз қатысудан бас тартсаңыз, сіз берген барлық деректер жойылады. Осы зерттеуге қатысуыңызбен байланысты күте алатын әлеуетті артықшылықтарға қазақстандық контекст үшін бірегей болып табылатын зерттеу жұмысында өз тәжірибеңізбен бөлісу және академиялық жазуда жасанды интеллектті пайдалану туралы жаңа идеялар алу мүмкіндігі жатады. Ағымдағы зерттеу жасанды интеллект студенттердің сауаттылығына қалай әсер ететіні және жасанды интеллект арқылы жазудың артықшылықтары мен кемшіліктері туралы түсінік береді деп күтілуде. Бұл өз кезегінде жазуға үйрету стратегияларын жетілдіру ұсыныстарына негіз бола алады. Сіздің осы зерттеуге қатысу немесе одан бас тарту шешіміңіз сіздің академиялық тұрысыңызға әсер етпейді.

**ҚАТЫСУШЫ ҚҰҚЫҚТАРЫ:** Сіздің қатысуыңыз ерікті болып табылады. Сіз келісіміңізден бас тартуға немесе кез келген уақытта еш түсініктеме берместен немесе, басқаша жағдайда сізге тиесілі болып табылатын артықшылықтарыңыздан

айырылмай, қатысуды доғаруға құқылысыз. Балама - қатысудан бас тарту. Сіздің белгілі бір сұрақтарға жауап беруден бас тартуға құқығыңыз бар. Бұл зерттеудің нәтижелері ғылыми немесе кәсіби жиналыстарда ұсынылуы немесе ғылыми журналдарда жариялануы мүмкін. Егер қандай да бір сұрақтарыңыз болса немесе осы зерттеу жұмысы нәтижелерінің көшірмесін алғыңыз келсе, маған төмендегі электрондық пошта немесе телефон нөмірі арқылы хабарласа аласыз.

### **БАЙЛАНЫС АҚПАРАТЫ:**

**Сұрақтар:** егер сіздің осы зерттеуге, оны жүргізу рәсіміне, тәуекелдер мен артықшылықтарына қатысты сұрақтарыңыз, ескертулеріңізб немесе шағымдарыңыз болса, осы студенттің магистрлік диссертациясының жетекшісі Мишель Бедекерге, [michelle.bedeker@nu.edu.kz](mailto:michelle.bedeker@nu.edu.kz) немесе зерттеушінің өзіне, Жанель Закироваға, [zhanel.zakirova@nu.edu.kz](mailto:zhanel.zakirova@nu.edu.kz), +77024753656 хабарласыңыз.

**Тәуелсіз байланыс:** Егер сіз бұл зерттеудің қалай жүргізілгенімен қанағаттанбасаңыз, әлде зерттеу немесе қатысушы ретіндегі өзіңіздің құқықтарыңыз туралы қандай да бір мәселелер, шағымдар немесе жалпы сұрақтарыңыз болса, зерттеу тобына қатысы жоқ тәуелсіз тұлғаға телефон арқылы хабарласу үшін Жоғары Білім Беру Мектебінің Зерттеу Комитетіне хабарласыңыз +7 7172 709359. Сіз сондай-ақ Жоғары Білім Беру Мектебінің Зерттеу Комитетіне электрондық хат жаза аласыз [gse\\_researchcommittee@nu.edu.kz](mailto:gse_researchcommittee@nu.edu.kz)

Егер сіз осы зерттеуге қатысуға келіссеңіз, осы келісім формасына қол қойыңыз.

- Мен берілген ақпаратты мұқият оқып шықтым;
- Мен 18 жаста екенімді немесе 18 жастан асқанымды растаймын;
- Маған зерттеудің мақсаттары мен рәсімдері туралы толық ақпарат берілді;

- Мен жиналған деректердің қалай пайдаланылатынын, құпия ақпарат тек зерттеушілерге қол жетімді болатынын және бөгде адамдарға жетімсіз болатындығын түсінемін;
- Мен түсініктеме бермей-ақ, кез келген уақытта зерттеуге қатысудан бас тартуға құқығым бар екенін түсінемін;
- Жоғарыда аталған барлық жағдайларды толық түсіне отырып, мен өз еркіммен осы зерттеуге қатысуға келісемін.

Қолы: \_\_\_\_\_ Күні: \_\_\_\_\_

**Осы келісім формасының қол қойылған және күні көрсетілген көшірмесі сізге сақтауға беріледі.**

## Формы Информированного Согласия

### Изучение Искусственного Интеллекта в Качестве Социальной Практики: Как Магистранты Ориентируются в Искусственном Интеллекте и Академическом

#### Письме

**ОПИСАНИЕ:** Вы приглашены принять участие в исследовании посвященном изучению опыта казахстанских магистрантов в использовании инструментов искусственного интеллекта в своем академическом письме. Цель этого исследования - изучить, как инструменты для письма использующие искусственный интеллект влияют на практики грамотности магистрантов, а также их влияние на их академическое письмо.

**ОПИСАНИЕ:** Вы приглашены принять участие в исследовании, проводимом Жанель Закировой, студенткой программы магистратуры ВШО НУ, посвященном изучению опыта казахстанских магистрантов в использовании инструментов искусственного интеллекта в своем академическом письме. Цель этого исследования - изучить, как инструменты для письма использующие искусственный интеллект влияют на новые практики грамотности, а также потенциальные преимущества и недостатки, которые данные инструменты несут для академического письма магистрантов. Если вы согласны участвовать в исследовании, вам нужно будет нарисовать “круг значимости”, пройти опрос, а также участвовать в интервью фокус группы. Согласно вашим предпочтениям, вы также можете выбрать индивидуальное интервью вместо участия в фокус-группе. Во время интервью беседы будут записываться на диктофон. Если вы не желаете чтобы разговор записывали, будут сделаны письменные заметки.

Конфиденциальность будет обеспечена в отношении любой информации, полученной в результате интервью. Ваше имя не будет упоминаться в исследовании,

вместо них будет использован специальный код. Для обеспечения конфиденциальности, электронные данные будут храниться на защищенном паролем ноутбуке, а бумажные материалы будут храниться в закрытом на замок ящике. Доступ к данным будут иметь только исследователь и её научный руководитель. Окончательная версия диссертации не будет содержать материалов, которые могли бы раскрывать вашу личность. По завершении исследования все записи интервью, заметки, опросы и формы согласия будут удалены.

**ВРЕМЯ УЧАСТИЯ:** Ваше участие в данном исследовании займет приблизительно 70-85 минут вашего времени. Круг значимости займет не более 20 минут вашего времени. Кроме того, опрос займет приблизительно 20 минут, а интервью фокус-группы запланированы на примерно 30-45 минут.

**РИСКИ И ПРЕИМУЩЕСТВА:** Потенциальные риски, связанные с данным исследованием, минимальны. В течение исследования исследователь не будет собирать какую-либо идентифицирующую информацию, включая ваше имя, фамилию, точный возраст, адрес, год обучения, или специальность. Другие потенциально идентифицируемые данные, полученные в ходе исследования, не будут раскрываться администрации университета, членам факультета, персоналу или внешним сторонам. В зависимости от вашего расписания, вы можете заполнить Круг значимости и пройти опрос в любых удобных вам время и месте. Фокус группы будут запланированы на удобное для всех участников время. Другие риски, связанные с вашим участием в этом исследовании, не придвидены. Если вы откажетесь от своего участия, предоставленные вами данные будут удалены. Потенциальные преимущества, которые вы можете ожидать, включают возможность поделиться вашим опытом в исследовательской работе, уникальной для казахстанского контекста, и получить новые идеи о использовании искусственного

интеллекта в академическом письме. Ожидается что текущее исследование даст представление о том, как искусственный интеллект влияет на грамотность студентов и о преимуществах и недостатках письма с использованием искусственного интеллекта, что может послужить основой для рекомендаций для улучшения стратегий обучения письму. Ваш выбор участвовать в этом исследовании или отказаться от него не повлияет на ваше академическое положение.

**ПРАВА УЧАСТНИКА:** Ваше участие является добровольным, и у вас есть право отозвать свое согласие или прекратить участие в любое время без каких-либо последствий или утраты привилегий которые вам, в ином случае, полагаются.

Альтернативой является отказ от участия. У вас есть право отказаться отвечать на определенные вопросы. Результаты этого исследования могут быть представлены на научных или профессиональных собраниях или опубликованы в научных журналах.

Если у вас есть какие-либо вопросы или вам нужна копия результатов этого исследования, вы можете обратиться ко мне по указанному ниже адресу электронной почты или номеру телефона.

**КОНТАКТНАЯ ИНФОРМАЦИЯ:**

**Вопросы:** Если у вас есть вопросы, замечания или жалобы по поводу данного исследования, процедуры его проведения, рисков и преимуществ, обратитесь к научному руководителю магистерской диссертации данного студента, Мишель Бедекер, michelle.bedeker@nu.edu.kz, или к самому исследователю, Жанель Закировой, zhanel.zakirova@nu.edu.kz, +77024753656.

**Независимый контакт:** Если вы не удовлетворены тем, как проводится это исследование, или у вас есть какие-либо проблемы, жалобы или общие вопросы о исследовании или ваших правах как участника, пожалуйста, свяжитесь с Исследовательским Комитетом Высшей Школы Образования, чтобы обратиться к

независимому лицу, не связанному с исследовательской командой, по телефону +7 7172 709359. Вы также можете написать электронное письмо Исследовательскому Комитету Высшей Школы Образования, по адресу [gse\\_researchcommittee@nu.edu.kz](mailto:gse_researchcommittee@nu.edu.kz)

Пожалуйста, подпишите данную форму согласия, если вы соглашаетесь участвовать в данном исследовании.

- Я внимательно прочитал предоставленную информацию;
- Я подтверждаю, что мне 18 лет или я старше 18;
- Мне была предоставлена полная информация о целях и процедурах исследования;
- Я понимаю, как будут использоваться собранные данные и что конфиденциальная информация будет доступна только исследователям и будет недоступна другим лицам;
- Я понимаю, что я вправе отказаться от участия в исследовании в любое время, не давая объяснений;
- С полным осознанием всех вышеперечисленных обстоятельств, я по собственной воле, соглашаюсь принять участие в данном исследовании.

Подпись: \_\_\_\_\_ Дата: \_\_\_\_\_

**Дополнительная копия этой подписанной и датированной формы согласия предоставляется вам для сохранения.**

### Appendix G: Data Coding Sample (Excerpt)

| Extracts from participants' answers  | Codes                              | Subthemes                               | Themes   |
|--|------------------------------------|---|--|
| Well, I would suggest <u>getting ideas</u> from ChatGPT, <u>but then look for articles yourself</u> and <u>support these ideas</u> . <u>Complicate them</u> and see if they fit your work.   | Research as Inquiry                | AI-Informed Research Literacy Practices | Emerging AI-Informed Academic Literacy Practices |
| It has no access to new data. GPT 3.5, for example, has information about all the data until November 2022.  | Complaining About the Free Version | Unaffordability of Premium Versions     | Challenges of Writing with AI                    |
| Initially, I felt excited. I think I was the first to discover these tools, but for some reason, <u>I was shamed by my peers as they thought it was unethical or even dangerous</u> . Honestly, I took it personally and stopped sharing my excitement, but then, gradually, everyone started using it but was hesitant to share. <u>I could smell the "guilt" in the air</u> , but I think that <u>as long as you are honest with yourself and don't simply generate text</u> but work on enhancing and making it better and more coherent, AI does its job. Overall, <u>I feel empowered</u> ; it <u>saves my time</u> , eases my mind, and, most importantly, helps with my writer's block. | Feeling Shame                      | Power Relations                         | Navigating Institutional Practices               |
|  | Valuing Ethics                     | Ethical Considerations in AI Use        | Navigating Institutional Practices               |
|  | Feeling Confident, Empowered       | AI as a Writing Support                 | Benefits of Writing with AI                      |
|  | Time (V)                           | AI as a Writing Support                 | Benefits of Writing with AI                      |