USING DIGITAL TOOLS IN ACADEMIC WRITING AMONG UNDERGRADUATE ESL LEARNERS IN PRIVATE HIGHER INSTITUTION

CHRISTINE WONG

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SUPERVISOR: PN. AYU RITA BINTI MOHAMAD

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Abstract

In the evolving landscape of academic communication, digital tools have emerged as pivotal companions, particularly for ESL learners navigating the complex terrain of academic writing. This study explores the perceived effectiveness and specific contributions of digital writing tools, namely ChatGPT and Grammarly, among 106 undergraduate ESL learners at Universiti Tunku Abdul Rahman (UTAR). Employing a mixed-methods design, quantitative data were collected via structured questionnaires, while qualitative insights were drawn from in-depth semi-structured interviews. Findings reveal that students overwhelmingly recognised the tools' utility in enhancing grammar accuracy, vocabulary sophistication, coherence, and organisational structure. Real-time feedback and instant assistance were identified as key features that bolstered both writing efficiency and learner confidence. However, limitations such as over-reliance, lack of contextual nuance, and concerns over citation accuracy surfaced, underscoring the need for critical engagement and guided usage. The study not only affirms the transformative potential of digital tools in scaffolding academic writing development but also highlights the necessity for localised pedagogical support to ensure that these digital tools empower rather than replace the learner's voice. In illuminating the intersection of digital tools and ESL academic writing, this research contributes timely insight into the digital shift reshaping language education in Malaysian private higher institutions.

Keywords: Digital tools, academic writing, ESL learners, writing enhancement, private higher institution

Subject Area:

1. P118 - P118.75: Language Acquisition
2. P121 - P149: Science of Language (Linguistics)
3. LB1028 - LB1028.3: Educational Technology
4. PE1128.A2: English as a Second Language (ESL)

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Chapter 1 Introduction

1.0 Introduction

English is the universal language that connects people across different cultures and continents, facilitating international communication, trade, and education. In Malaysia, its importance as a second language dates back to its introduction during British colonial control in the 18th century. As the language of administration, trade, and education, English became connected with socioeconomic mobility and prestige, often widening class divides. English-medium schools served the masses. Following Malaysia's independence in 1957, the official language, relegating English to a secondary status. Despite this, English remains a key medium for worldwide trade, technology, and education (Stephen, 2013). The country's linguistic policy and educational system have evolved over time, including modifications in English as a learning medium (Liu & Ricks, 2012).

English is a required subject in Malaysian schools nowadays, demonstrating its importance for academic and professional success. However, recent Sijil Pelajaran Malaysia (SPM) results reveal an ongoing issue: fewer students are getting high grades in English, with many struggling to achieve even moderate proficiency (EduAdvisor, 2023). Similarly, the Malaysian University English Test (MUET), which evaluates students' speaking, listening, reading, and writing abilities, identifies large inequalities in academic writing proficiency. In 2022, only a tiny minority of candidates received the highest bands, with the rest demonstrating moderate or basic competency (Majlis Peperiksaan Malaysia, 2022). These findings highlight the critical need for novel approaches to addressing English proficiency issues, particularly in academic settings. Digital tools have emerged as revolutionary resources for tackling these difficulties by providing personalised feedback and encouraging collaborative learning (Anna Lynn Bakar et al., 2021).

According to recent statistics, there is a concerning trend in English language proficiency among Malaysian students, as evidenced by the Sijil Pelajaran Malaysia results. According to a report, a total of 373,974 candidates sat for the SPM test, roughly 52,000 students failed the English paper on the 2022 SPM exams, highlighting the ongoing difficulty of acquiring language competency at the secondary education level (Norhisham, 2023).

In the MUET 2022 Session 3, a total of 65,866 candidates sat for the MUET test, only a small percentage of students achieved the highest levels of writing proficiency, with the majority falling in the mid-range bands. Notably, for the writing paper, only a minuscule 0.01% of students achieved the highest level of proficiency, which is Band 5+, and a total of 0.14% of students achieved Band 5. While 1.18% of students achieved Band 4.5 and 6.81% of students achieved Band 4. The majority of the students fell in Band 3.0, which stands for 45.56%. Unluckily, a total of 0.11% of students get Band 1 only for their writing paper in the MUET test (Majlis Peperiksaan Malaysia, 2022).

1.1 Background of the Study

Academic writing is an important ability in higher education that necessitates knowledge of syntax, coherence, vocabulary, and organisation. However, one of the most difficult areas of language acquisition for Malaysian English as a Second Language (ESL) students is writing. Traditional teaching methods, such as rote memorisation and paper-based exercises, may no longer meet the needs of today's tech-savvy learners (Yuk et al., 2019). The integration of digital tools into education has revolutionized language learning, especially for English as a Second Language (ESL) students, for whom writing can be a particularly difficult skill to master. This is because writing requires a high degree of linguistic accuracy, coherence, and effective expression (Sim & Ismail, 2023).

These qualities are also vital in professional settings, where precise and unambiguous communication is crucial. For assignments like producing reports, proposals, and client correspondence, employers place a high priority on writing that is cohesive and well-structured. Therefore, developing these writing abilities while in universities not only improves academic achievement but also gets students ready for the demands of the workplace in the future by guaranteeing they can participate successfully in a variety of professional settings (Paungan, 2023).

In contrast, digital tools such as grammar checkers, collaborative writing platforms, and interactive writing applications offer innovative approaches to teaching writing. These tools provide immediate feedback, foster collaboration, and give students access to diverse resources, making the learning process more engaging and tailored to individual needs (Ohidujjaman, 2024). Incorporating digital tools into teaching writing may help these students to overcome these obstacles by creating a more engaging, personalised, and resource-rich learning environment (Ramamuthie & Aziz, 2022).

Despite the ubiquitous use of digital tools in educational settings, research into their influence on undergraduate ESL learners in Malaysian private higher institutions remains limited. Most existing research focuses on larger educational environments or public institutions, leaving a gap in understanding how these tools accommodate the different profiles of students in private higher institutions. Furthermore, there is inadequate evidence on the effectiveness of digital tools in tackling specific academic writing issues encountered by ESL students, such as enhancing coherence, understanding essay format, and acquiring advanced vocabulary. These gaps underscore the need for specific study that investigates the contextual subtleties of private higher institutions and the full potential of digital tools to improve writing proficiency.

Given these challenges, the present study aims to investigate the use of digital tools in academic writing among undergraduate ESL learners in private higher institutions. By focusing on students at University Tunku Abdul Rahman (UTAR) in Kampar, Perak, the research seeks to understand how digital tools can help to overcome writing challenges and contribute to improving academic writing.

1.2 Statement of Problem

Undergraduate ESL learners often struggle with academic writing, especially when it comes to learning grammar, coherence, and vocabulary, making it difficult for them to write essays that are coherent and easy to read (Pheng et al., 2021). The dynamic needs of ESL learners are frequently not satisfied by conventional classroom techniques like lecture-based learning, rote learning, and traditional "chalk and talk" pedagogy. Although "chalk and talk" is still a useful method for teachers teaching basic grammar principles explanations, it frequently lacks the interactive and individualised components needed to fully address the variety of difficulties faced by ESL students. These approaches mostly emphasise teacher-centred learning, which restricts opportunities for the students to actively participate in class and receive the prompt feedback they need to address particular writing problems (Kumar, 2018). Furthermore, ESL students might not regularly have access to one-on-one help outside of the classroom, which makes it challenging for them to independently practice and improve their writing (Zakaria & Sulaiman, 2024). By creating interactive, customised, and learner-centred environments that better address these issues, innovative pedagogical approaches like incorporating digital tools into writing instruction can enhance conventional approaches (Kumar, 2018). The pressure on educators to juggle many demands, however, emphasises the need for innovative teaching methods that incorporate technology to enhance learning and make it more effective and interesting in addition to emphasising the development of writing abilities.

By offering personalized feedback, encouraging teamwork, and improving writing coherence and vocabulary, the increasing integration of digital tools, such as AI-driven platforms and collaborative writing applications which offers creative approaches to assist ESL learners. Through focused interventions, research has demonstrated that ChatGPT and similar tools can greatly enhance the writing skills of the ESL learners (Mahapatra, 2024). There is limited research on the precise effects of digital tools in academic writing on Malaysian undergraduate ESL learners in private higher institutions, despite their increasing use in the classroom. This is especially true in private universities, where contextual variables and a variety of learner profiles may affect the effectiveness of these tools (Zakaria & Sulaiman, 2024).

Thus, the present study aims to investigate the use of digital tools in academic writing among undergraduate ESL learners in private higher institutions and examine their effectiveness in supporting student learning and enhancing their writing skills development.

1.3 Research Objectives

1. To explore the ESL learners' perceptions of the effectiveness of digital tools in enhancing their academic writing skills.

2. To identify the specific contributions of digital tools in improving the academic writing performance of ESL learners.

1.4 Research Questions

1. What do ESL learners perceive as the effectiveness of digital tools in academic writing?

2. What do digital tools contribute to enhancing the academic writing performance of ESL learners?

1.5 Significance of Study

This study is of significant importance in benefiting both academic writing pedagogy and the integration of digital tools in the classroom. Through an analysis of how digital tools can benefit ESL learners with typical problems like vocabulary, grammar, and coherence, the study offers important insights on how to improve writing instruction. These results will assist educators in private higher institutions in customizing their instruction to better assist students and improve their academic performance.

Additionally, the study contributes to expanding the corpus of research on incorporating digital tools into education, specifically with regard to private higher institutions in Malaysia. It fills a significant gap in the literature by providing context-specific insights on the potential and difficulties particular to local ESL learners. The results can be used by software developers, educators, and policymakers to improve digital tools and make sure that they satisfy the various demands of the students.

Beyond its immediate context, the study emphasizes how digital tools can revolutionize academic writing by providing environments that are rich in resources, encouraging collaboration, and providing personalized feedback. These findings contribute to the theoretical frameworks in digital pedagogy by demonstrating how technology-mediated education can complement constructivist and learner-centred approaches. For example, research on digital tool integration in ESL writing classes stresses the tools that fit with Vygotsky's sociocultural theory, which promotes collaborative and participatory learning environments (Kilag et al., 2023). This theoretical insight underlines the significance of technology in bridging instructional gaps, making the findings applicable to a broader academic or language-learning setting. Ultimately, the study emphasizes how digital tools can help to provide more effective and engaging learning experiences in private higher institutions.

1.6 Operational Definition of Terms

In this part of the study, the terms that were used in the study were defined as below:

1.6.1 English as a Second Language (ESL)

English as a second language (ESL) refers to the teaching of English to non-native speakers who reside in a nation where English is a significant or official language (Alberta Education, 2007). In this study, ESL refers to undergraduate students in Malaysian private higher institutions learning English in an academic setting. These students rely on English for academic writing and other educational activities while navigating the challenges of using it as a non-native language.

1.6.2 Academic Writing

Academic writing refers to a writing style that uses formal, objective, and technical language to convey facts and concepts (The University of Sydney, 2023). In this study, academic writing specifically refers to the written assignments, essays, and research papers produced by undergraduate ESL learners in Malaysian private higher institutions.

1.6.3 Academic Performance

Academic performance refers to the assessment of a student's achievement in different academic subjects. Teachers or education officials typically use classroom performance, examinations, and standardised tests to assess student performance (Ballotpedia, n.d.). In this study, academic performance specifically refers to the writing-related outcomes of undergraduate ESL learners in Malaysian private higher institutions.

1.6.4 ESL Learners

English as a Second Language (ESL) learners refer to those who are developing competency in English in addition to their mother tongue, often within an educational setting

where English is a significant medium of instruction or communication (Lai et al., 2022). In this study, ESL learners specifically refer to undergraduate students in private higher institutions in Malaysia who use English to complete academic writing tasks, such as essays, research papers, and assignments.

1.6.5 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is an information systems theory that was presented by Davis in 1989. It explains and predicts how users embrace technology and is built around two major concepts: perceived utility, which relates to how much a user believes technology will improve their job performance, and perceived ease of use, which represents how simple the technology is to use (Mohd Shafie Rosli et al., 2022). In this study, TAM serves as a framework to analyse undergraduate ESL learners' acceptance of digital tools in academic writing. This approach will provide insights into the factors that influence the effective integration of digital tools in private higher institutions.

1.6.6 Ease of Use

Ease of Use refers to a user's perception that using a specific system or technology will be simple and uncomplicated. It represents the user's confidence in their capacity to understand and efficiently interact with the technology without facing major challenges (Jahangir & Begum, 2008). In this study, ease of use specifically refers to how undergraduate ESL learners in Malaysian private higher institutions perceive the simplicity and intuitiveness of digital tools for academic writing.

1.6.7 Attitude

Attitude can be defined as an individual's evaluation of an object, idea, person, or behaviour, reflecting a combination of cognitive beliefs, affective emotions, and behavioural tendencies. Attitudes influence how individuals perceive and respond to various stimuli,

serving as a framework for decision-making and behaviour (Fishman et al., 2021). In this study, attitudes refer to the undergraduate ESL learner's perspectives, feelings, and behavioural inclinations toward using digital tools in academic writing.

1.6.8 Perception

Perception refers to the process by which people choose, organize, and interpret sensory information in order to make sense of their surroundings (Perception, n.d.). In this study, perception specifically refers to how undergraduate ESL learners in Malaysian private higher institutions interpret and evaluate the effectiveness and usability of digital tools in academic writing.

1.7 Scope and Limitations of the study

This study focuses on examining the use of digital tools in academic writing among undergraduate ESL learners in private higher institutions, with a specific focus on the Malaysian context. It explores how important writing issues like grammar, coherence, vocabulary, and organization are addressed by digital tools. Malaysian private higher institutions are the focus of the study both geographically and institutionally, with the University Tunku Abdul Rahman (UTAR) acting as the main research location. Analysing the student's opinions on these digital tools' usefulness, usability, and attitudes towards integrating them into academic writing habits is part of the focus.

Furthermore, the research contributes to the expanding corpus of knowledge regarding the integration of digital tools in education, specifically concerning private higher institutions in Malaysia. Addressing a significant gap in the research, it provides context-specific insights into the opportunities and challenges particular to local ESL learners. The results can be used to improve digital tools and make sure that they satisfy the various demands of students by software developers, educators, and policymakers.

Beyond its immediate context, the study emphasizes how digital tools can revolutionize academic learning by providing an environment that is rich in resources, encouraging collaboration, and providing personalized feedback. These observations can guide more extensive uses of educational technology in many fields, which will help students in different academic or language-learning contexts. Despite these limitations, this study aims to provide valuable insights into the perceptions of the effectiveness of digital tools in enhancing their academic writing skills, the perceptions of the usability and accessibility of digital tools in academic writing, and the attitudes of ESL learners in private higher institutions toward the adoption and integration of digital tools in academic writing practices.

Chapter 2 Literature Review

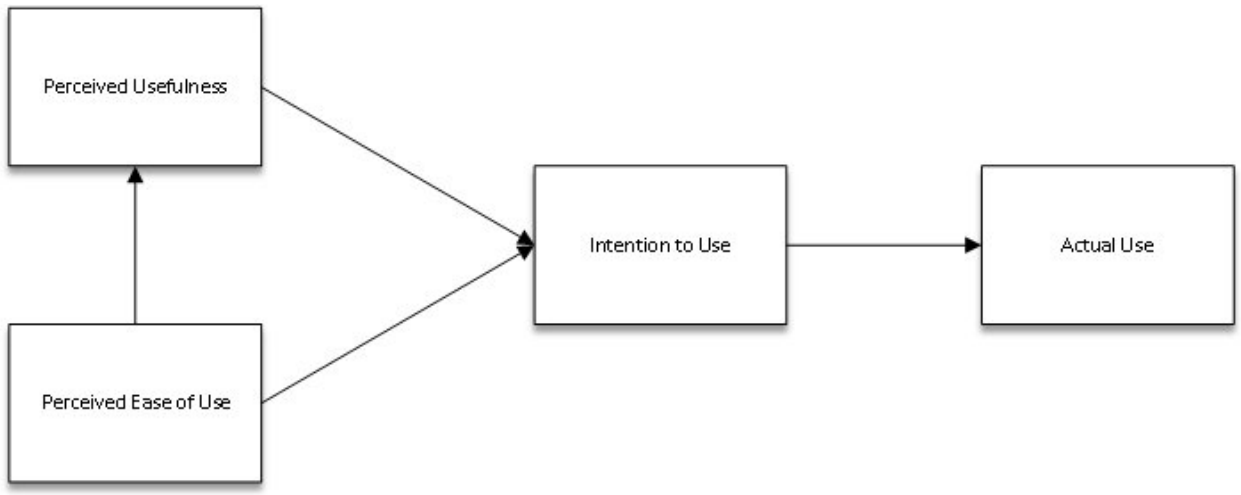
2.0 Introduction

This chapter will introduce the theoretical framework for the study, which draws on the Technology Acceptance Model (TAM) by Davis in 1989, referring to the process of writing technique, and constructivist learning theory, providing a multidimensional perspective on the role of digital tools in enhancing academic writing among ESL learners.

2.1 Theoretical Framework

Davis (1989) Technology Acceptance Model (Figure 1) serves as this study's theoretical framework.

Figure 1: The Technology Acceptance Model by Davis (1989)



The TAM sheds light on how students assess the value and ease of use of digital tools like Grammarly, ChatGPT, and Quill Bot for tackling academic writing issues. TAM represents the behaviour as predicted by perceived ease of use, perceived usefulness, and behavioural intention. The process writing approach emphasises the use of these tools at various stages of writing, such as brainstorming, drafting, revising, and editing. Additionally, constructivist learning theory emphasises how digital tools promote learner autonomy and active involvement

by allowing for personalised and self-directed learning experiences. These perspectives provide a complete framework for assessing the integration and impact of digital tools on the academic writing practices of EL learners at Malaysian private higher institutions

2.2 Digital Tools Revolutions

The digital tools revolution has transformed how businesses and individuals operate, enabling greater efficiency, innovation, and connectivity. These digital tools enable automation, streamline procedures, and promote cross-industry collaboration. This trend highlights the use of digital tools in daily activities, which promotes efficiency and agility in an increasingly fast-paced world (Zysman & Kenney, 2018). Beyond efficiency, the use of digital tools promotes creativity by making it possible to investigate innovative operational and business models. Adaptability is fostered by the digital tool's revolution, enabling organisations to swiftly change course in response to disruptions and market demands. Cloud computing and machine learning algorithms are examples of advanced tools that have transformed industries by providing real-time monitoring, predictive analytics, and increased scalability. Additionally, digital tools have made it easier to collaborate globally and have created chances for online learning, remote work, and virtual events. This change emphasises how important technology is to build networked systems that improve resilience and productivity in a variety of fields such as education, business and finance (Abd-Rabo & Hashaikeh, 2021). Educational institutions use digital tools to build interactive, personalised, and resource-rich learning environments. Digital tools like Google Classroom, YouTube, and AI-based learning apps facilitate online learning, virtual classrooms, and assignment management. Businesses utilize digital tools like CRM software, cloud-based data management systems, and machine learning models to improve operations, customer experiences, and decision-making. The banking industry uses digital tools for fraud detection, algorithmic trading, and consumer personalization.

2.3 The Impact of Digital Tools on Education and Academic Writing

In the sphere of education, digital tools have altered traditional teaching and learning approaches. Online learning platforms, virtual classrooms, and Artificial Intelligence (AI)-powered applications have all contributed to increased accessibility and personalisation in education. Digital tools in education improve automation and interactivity, allowing educators to streamline administrative work and focus more on effective teaching. These tools engage students by providing multimedia resources, real-time feedback, and collaborative opportunities, bridging the gaps left by traditional educational methods (Abd-Rabo & Hashaikeh, 2021).

In academic writing, digital tools have transformed how learners and educators approach the development of writing abilities. Digital tools such as Grammarly, Quill Bot, and other AI-powered platforms deliver instant feedback, promote collaboration, and increase writing quality. The use of digital tools increases efficiency and adaptability, allowing students to solve basic writing challenges such as syntax, coherence, and vocabulary. For instance, digital tools like Grammarly and ChatGPT help generate ideas, organize arguments, and refine grammar, ultimately improving their confidence and productivity in academic writing (Ozfidan et al., 2024). Students can improve their writing skills with these digital tools, while educators can adopt innovative pedagogies to enhance both individual and collaborative learning outcomes (Abd-Rabo & Hashaikeh, 2021). The urge may be observed in the Malaysian Education Blueprint, which has stressed the incorporation of digital tools in one of its eleven shifts, aiming to change the education system. This strategy goal reflects a global trend of using digital tools to improve individual and collaborative learning results (Devan, 2021).

2.4 Usage of Digital Tools in Academic Writing in Higher Learning Institutions

Digital tools are increasingly being employed in higher learning institutions, particularly in the field of academic writing, to help learners improve their writing abilities and enrich their learning experiences. In higher learning institutions, the use of digital tools has caused substantial changes in how students approach writing tasks. AI-powered tools like Grammarly, Quill Bot, and Turnitin provide students with instant feedback, allowing them to improve their grammar, style, and vocabulary. These tools help students strengthen their writing talents by providing real-time suggestions and feedback, encouraging iterative learning and skill refinement (Jen & Salam, 2024).

The incorporation of AI into academic writing has also helped to improve efficiency in the writing process. AI tools such as ChatGPT and Google Bard help learners generate ideas, draft content, and refine their work (Song & Song, 2023; Lashari et al., 2023). According to current research, these digital tools considerably improve the learner's writing quality by assisting learners in identifying and correcting errors while instilling confidence in their writing abilities (Yeo, 2023). Furthermore, the widespread use of AI tools fosters learner collaboration, as platforms such as Google Docs allow numerous users to contribute to a single document, improving peer feedback and collaborative learning opportunities (Nguyen & Nguyen, 2022).

2.5 Perceive the Effectiveness of Digital Tools in Academic Writing

The integration of digital tools in academic writing has significantly enhanced learners' ability to generate logical and high-quality written work. Digital tools such as Grammarly, Google Translate, and AI-powered platforms have been shown to help with various stages of the writing process, from idea generation to drafting and revision. Digital tools allow writers to effectively brainstorm ideas, outline content, and rewrite drafts, adapting to the particular demands of both native and non-native English speakers (Schcolnik, 2018).

Furthermore, digital tools increase learner participation in writing class, making the process more engaging and less repetitive. Automatic suggestions for content growth and editing enable students to try new ideas while retaining accuracy and creativity. However, the study also observed that while tools are helpful in the early stages of writing, their usefulness in teaching advanced academic conventions like argumentation and critical analysis remains restricted, indicating a need for their further optimization (Utami et al., 2023).

2.6 Student's Perception of Digital Tools

The use of digital tools in academic writing has prompted a variety of reactions among students, with many viewing these tools as necessary for strengthening their writing skills. According to Hidayat and Sumarwati (2024), undergraduate students perceive digital tools like Grammarly and ChatGPT as useful resources for improving their grammar accuracy, coherence, and essay structure. These tools provide real-time feedback and adjustments, allowing students to more effectively handle typical writing issues. This quick feedback mechanism builds confidence and pushes students to write more frequently, making digital tools a favoured choice for self-directed learning.

While students appreciate the increased efficiency and customized learning enabled by generating digital tools, they often voice worries about learning curves, data privacy, and depersonalization (Salam, 2023). Generative digital tools improve academic writing skills, grammar, vocabulary, plagiarism reduction, learning environment, and engagement (Zulfa et al., 2023). However, worries remain about plagiarism detection and its impact on students' writing authenticity (Khabib, 2022; Fitria, 2023).

2.7 Reviewed of Past Studies

The integration of digital tools into the academic writing practices of ESL learners had gained widespread traction in recent years. Numerous studies demonstrates that digital tools

such as ChatGPT, Grammarly, and Automated Writing Evaluation (AWE) systems offer considerable advantages, particularly in enhancing grammatical accuracy, improving text coherence, and supporting idea development (Rahman et al., 2023; Miranty et al., 2023; Utami et al., 2023; Hidayat & Sujarwati, 2024; Ozfidan et al., 2024). However, these same studies caution that uncritical reliance on such technologies may impair academic originality, foster dependency, and raise ethical concerns.

Across several contexts, the perceived benefits of AI in supporting surface-level writing skills are consistently reported. Hidayat and Sujarwati (2024) found that Indonesian students praised ChatGPT's ability to enhance grammar, sentence structure, and rephrasing, reflecting a general optimism towards the technology. Echoing these findings, Ozfidan et al. (2024) identified a strong endorsement among Saudi undergraduates for the use of Grammarly and Google Translate, particularly for grammar and spell-check functionalities. Similarly, Rahman et al. (2023) reported that Malaysian students found AWE systems highly effective in identifying grammatical errors and enhancing overall writing proficiency. This convergence across studies indicates a broad agreement that digital writing tools serve as valuable aids in improving technical writing quality across different ESL populations.

Beyond the technical improvements, the potential drawbacks associated with the use of AI tools have been a recurring theme. Hidayat and Sujarwati (2024) expressed concerns that overreliance on ChatGPT could stifle creativity and diminish students' original contributions. Utami et al. (2023) similarly highlighted that while Indonesian students appreciated AI tools during the initial writing stages, such as planning and drafting, they often struggled to maintain critical engagement and independent voice throughout the writing process. These concerns resonate with the findings of Ozfidan et al. (2024), who documented apprehensions regarding the reliability, contextual appropriateness, and ethical use of AI tools among Saudi learners.

Collectively, these studies underscore a paradox: although AI tools can streamline certain aspects of writing, their unregulated use may inadvertently compromise deeper cognitive and academic development.

Another common thread is the call for structured training to optimise the use of AI tools ethically and effectively. The importance of cultivating AI literacy among students to ensure that these technologies support, rather than replace, the essential process of critical thinking and independent academic writing (Utami et al., 2023; Ozfidan et al., 2024). Rahman et al. (2023) also suggested that integrating AWE tools into formal instructional frameworks could bolster students' confidence while maintaining a focus on authentic learning outcomes.

Interestingly, a few studies ventured into examining how structured, sequential use of multiple digital tools could amplify writing improvements. Miranty et al. (2023) demonstrated that Indonesian undergraduates who used Grammarly over a sustained period exhibited significant gains in writing performance. Their findings suggest that deliberate and pedagogically informed sequencing of digital tools might minimise educational benefits while mitigating risks of misuse.

Taken together, these studies portray a nuanced landscape. On one hand, digital tools undeniably enhance ESL students' mechanical writing skills, offering immediate corrective feedback and facilitating idea generation. On the other hand, without careful guidance, students risk becoming passive recipients of machine-generated output rather than active, critical authors. The pattern across different national contexts, Indonesia, Malaysia, Saudi Arabia, points to a universal tension between the empowering and potentially constraining effects of AI-assisted writing.

Building upon these insights, the present study proposes to focus specifically on ESL learners within private higher education institutions, an area largely neglected in prior research.

Whereas previous studies concentrated predominantly on public university contexts or singular tools, this research embraces a broader array of digital resources and considers the informal, everyday practices of private higher institution students. By doing so, it aims not only to confirm existing patterns but also to uncover new challenges and opportunities unique to this academic setting. In sum, this study seeks to extend the current body of knowledge by offering more contextually sensitive strategies for integrating digital tools into ESL academic writing instruction.

Chapter 3 Methodology

33.0 Introduction

This chapter outlines the methodology employed in the study, detailing the research design, methodology, instruments, sampling techniques, data collection procedures, and methods of data analysis. Each component is discussed to provide a comprehensive understanding of the systematic approach taken to address the research objectives.

3.1 Research Design

A mixed-methods approach was employed in this study to gain a comprehensive understanding of the research questions. This approach combines quantitative and qualitative methods to collect and analyse the data required for the study, leveraging the strengths of both methodologies (Chua, 2020). Mixed-methods research addressed the limitations inherent in using either qualitative or quantitative methods alone. By integrating these approaches, the study explored the research topics with both depth and breadth, resulting in more nuanced and robust findings (Dawadi et al., 2021). Additionally, this design provided a holistic view of the subject under investigation, enhancing the overall effectiveness of the research (Dawadi et al., 2021).

In this study, a quantitative survey was conducted among undergraduate ESL learners at the University Tunku Abdul Rahman (UTAR) to examine their use of digital tools in academic writing. The reason for using an online survey questionnaire to collect the quantitative data was based on its capacity for anonymous responses. Participants were likely to feel more comfortable and truthful when answering questions anonymously online. Moreover, the online survey questionnaire offered greater reach and accessibility, allowing the researcher to engage with a larger and more geographically diverse group of participants, since the survey could be accessed from anywhere with an internet connection. Given the busy

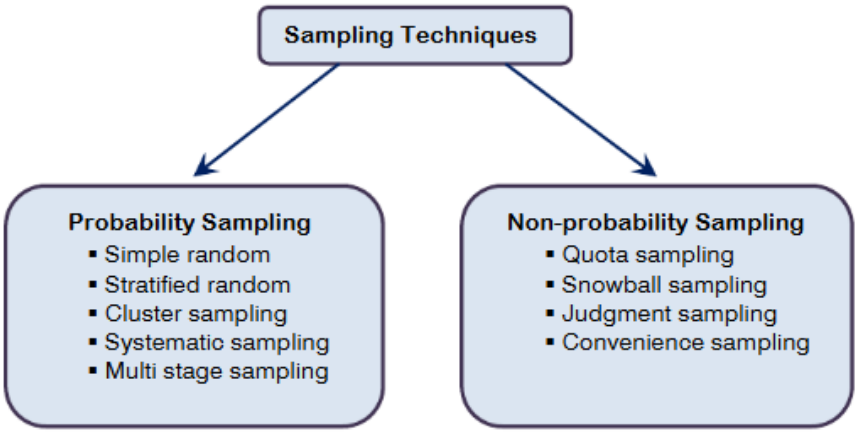
schedules of most participants, this approach offered a convenient and flexible way for them to respond.

The study's qualitative methodology involved conducting in-person interviews to gather rich and detailed information. This approach allowed for a deeper exploration of participants' responses, enabling the researcher to ask follow-up questions, seek clarification, and probe for more specific details. By directly addressing any ambiguous or unclear comments, in-person interviews minimised the risk of misinterpretation and ensured the accuracy of the collected data. Furthermore, these qualitative interviews were used to investigate how digital tools were employed and to evaluate their effectiveness in enhancing academic writing skills. By integrating qualitative insights with quantitative findings, the study achieved a balanced exploration of its objectives and provided a more comprehensive understanding of the research topic.

3.2 Sample and Sampling Techniques

Shorten and Moorley (2014) define sampling techniques as the process of selecting a representative subset of a population for research purposes. Sampling techniques are broadly categorised into probability and non-probability techniques. Before selecting a specific sort of sampling strategy, it is necessary to determine a wide sampling technique. Figure 2 illustrates the numerous types of sampling techniques. Probability sampling ensures that every individual in the population has an equal chance of being selected, whereas non-probability sampling is often associated with qualitative research and case study designs.

Figure 2: Sampling Techniques



This study employed a non-probability purposive sampling method to ensure that participants were intentionally selected based on their relevance to the research objectives. The target population consisted of undergraduate ESL learners who actively used digital tools for academic writing tasks. These learners were chosen because their experience with digital tools aligned directly with the focus of this study. By selecting participants with specific characteristics, this method ensured the collection of meaningful data to address the research objectives.

This study's participants were selected from a population of approximately 18,000 undergraduate ESL learners at the University Tunku Abdul Rahman (UTAR). The G Power formula was utilised to determine the required sample size. This formula calculates sample sizes based on the population size and desired confidence level. For a population of 18,000, a sample size of at least 106 participants was deemed necessary (Kang 2021).

The inclusion criteria focused on students currently enrolled in undergraduate programs who had prior experience using digital tools for academic writing. These participants completed a structured questionnaire, and their responses were analysed to ensure alignment with the research objectives. From this sample, a smaller subset of ten participants was

purposively selected for semi-structured interviews, consistent with Creswell's (2018) recommendation that qualitative research should involve purposive sampling to select individuals who can provide rich, detailed information. According to Crewell, qualitative sample sizes typically range from 5 to 25 participants, depending on the study's scope and depth of inquiry. The selected ten participants were deemed sufficient to capture diverse perspectives while allowing for meaningful, in-depth analysis. This qualitative phase enabled a deeper exploration of participants' experiences with digital tools, providing richer insights into their effectiveness and usage in academic writing.

3.3 Participants

The participants in this study were undergraduate ESL learners at the University Tunku Abdul Rahman (UTAR). The rationale for selecting undergraduate ESL learners at UTAR as participants was based on their active engagement with digital tools in their academic writing processes, which made them a relevant and accessible group for this study. Their experience with digital tools provided valuable insights into the effectiveness and limitations of such tools in enhancing academic writing skills. Additionally, as UTAR represents a diverse student population within a private higher education institution in Malaysia, the findings from this study offered context-specific insights into the challenges and opportunities faced by ESL learners in similar academic settings.

3.3 Research Instrument

In this study, a questionnaire was employed as the primary instrument for the quantitative research method, while a semi-structured interview was utilised for the qualitative research method. The questionnaire comprised 20 questions designed specifically for ESL learners, with participants responding using a Five-Point Likert Scale ranging from "Strongly Agree" to "Strongly Disagree." This scale was selected for its ability to capture varying levels

of agreement, providing nuanced insights beyond simple binary response formats (McLeod, 2019). Furthermore, the use of a Likert Scale in an online survey format promoted participant anonymity, which helped to reduce social desirability bias and encouraged honest responses from participants (McLeod, 2019). The questionnaire was adopted from Ozfidan et al. (2024) in the paper titled "The Use of AI Tools in English Academic Writing by Saudi Undergraduates."

After completing the quantitative phase, the qualitative research process began with obtaining informed consent from participants for the semi-structured interviews. Ten participants were selected based on predetermined criteria aligned with the research's objectives. Each interview session lasted approximately 40 to 50 minutes. The semi-structured format provided the researcher with the flexibility to ask follow-up questions, enabling a deeper exploration of participants' responses and experiences (Chua, 2020). The interview questions were adapted from the research study "Utilization of Artificial Intelligence Technology in an Academic Writing Class: How Do Indonesian Students Perceive?" conducted by Utami et al. (2023).

3.4 Data Collection Procedures

The questionnaire was distributed to participants via Google Forms, providing a convenient and accessible platform for data collection. Participants responded to each statement using a Five-Point Likert Scale, which included the options: Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree. The Five-Point Likert Scale was chosen over the Four-Point Likert Scale due to its ability to capture a broader range of participant perspectives, resulting in more accurate and higher-quality data (Østerås et al., 2008).

The interview sessions were conducted with participants online using the Zoom platform, ensuring convenience and flexibility for both the researcher and participants. Before

the session, participants provided informed consent for the interviews to be recorded, with assurances that all recordings and discussions would be treated with the utmost confidentiality. This approach ensured compliance with ethical standards while fostering a secure and open environment for participants to share their insights.

3.5 Data Analysis

The data collected through the online questionnaire were analysed using the Statistical Package for the Social Sciences (SPSS) software. The responses were systematically organised, encoded, and processed to compute descriptive statistics such as frequencies and percentages. This statistical interpretation provided a clear overview of the participants' perceptions and experiences with digital tools in academic writing.

The data obtained from semi-structured interviews were analysed manually using thematic analysis. This process involved transcribing the interview recordings verbatim, followed by coding to identify recurring themes and patterns. These themes were categorised to provide insights into how digital tools are used and their perceived effectiveness in academic writing. Thematic analysis allowed for a deeper exploration of participants' experiences, highlighting nuanced perspectives that complemented the quantitative findings. This qualitative approach ensured that the rich, contextual data collected from interviews were thoroughly examined and contributed meaningfully to addressing the study's objectives.

By integrating these quantitative and qualitative methods, the study provided a comprehensive understanding of the research topic, combining statistical trends with in-depth narrative insights.

Chapter 4: Findings and Analysis

4.0 Introduction

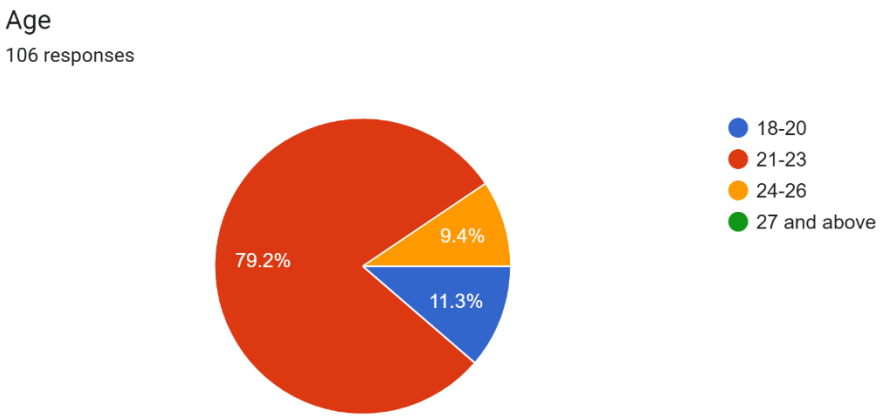
This chapter presents the findings and analysis of the study based on the data collected through both quantitative surveys and qualitative interviews. The purpose is to address the research questions outlined in Chapter 1, specifically (RQ 1) to explore undergraduate ESL learners' perceptions of the effectiveness of digital tools in enhancing their academic writing skills, and (RQ 2) to identify the specific contributions of digital tools in improving academic writing. Data collection was conducted over two weeks involving undergraduate ESL learners from Universiti Tunku Abdul Rahman (UTAR). A total of 106 students participated in the survey, and ten participants were purposively selected for follow-up semi-structured interviews to gain deeper insights into their experiences with digital tools in a private higher education context.

4.1 Demographic Information of Participants

Section A of the quantitative survey presents the demographic information of the participants collected through the survey, which was analysed using the Statistical Package for the Social Sciences (SPSS) software. The data focuses on two main categories, which are age and faculty affiliation of the undergraduate ESL learners from Universiti Tunku Abdul Rahman (UTAR).

4.1.1 Age Distribution

Figure 4.1.1: Age of the respondents



As shown in Figure 4.1.1, the research sample consisted of 12 students (11.3%) aged between 18-20, while the majority, 84 students (79.2%), were aged between 21-23. Additionally, 10 students (9.4%) fell within the 24-26 age group. This indicates that most respondents were in their early twenties, a typical age range for undergraduate learners.

4.1.2 Faculty Representation

Figure 4.1.2: Faculty of the respondents

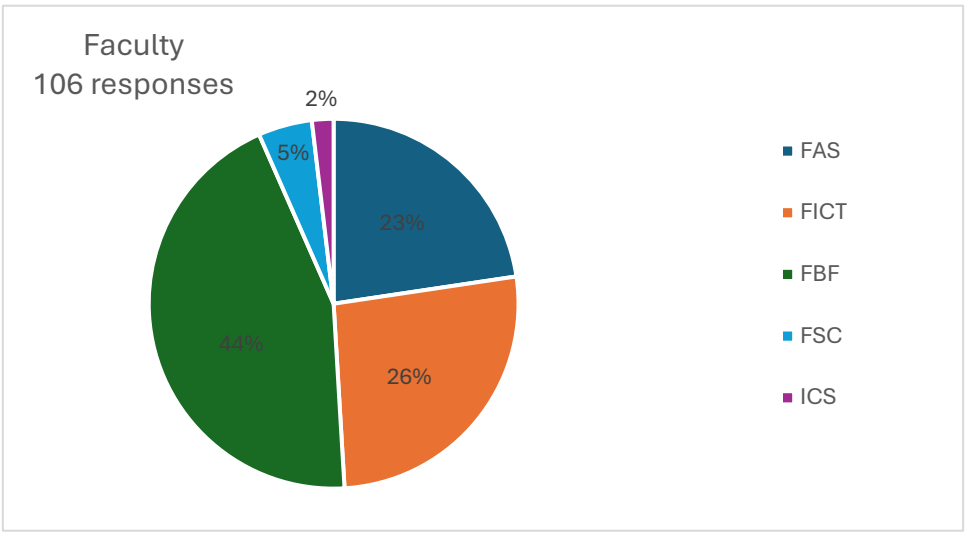


Figure 4.1.2 illustrates the distribution of the 106 respondents across various faculties. The majority were from the Faculty of Business and Finance (FBF), comprising 47 students (44%), followed by 28 students (26%) from the Faculty of Information and Communication Technology (FICT) and 24 students (23%) from the Faculty of Arts and Social Science (FAS). A smaller proportion of respondents came from the Faculty of Science (FSC), representing 5 students (5%), while the Institute of Chinese Studies (ICS) accounted for 2 students (2%).

Given that academic writing, including assignment writing, is a core requirement across all faculties, this broad faculty representation enabled the researcher to obtain a wide range of perspectives. The inclusion of students from diverse academic backgrounds adds depth and breadth to the findings, offering insights into how digital tools are used and perceived in different disciplinary contexts.

4.2 Familiarity and Frequency of Digital Tool Use in Academic Writing

Section B of the survey examined participants' familiarity with and frequency of digital tool usage, particularly in academic writing. The findings in this section were analysed based on the SPSS software of five Likert-scale items and one objective question. The Likert items measured students' general familiarity with digital tools, overall usage frequency, and specific usage in academic writing contexts. The objective item captured the names of the digital tools students commonly use.

Table 4.2.1: Students' Use and Familiarity with Digital Tools in Academic Writing

Item	Mean	Std. Deviation
I am familiar with digital tools that assist academic writing.	**4.13**	**0.782**
I frequently use digital tools.	**4.26**	**0.747**
I frequently use digital tools in academic writing.	**4.10**	**0.861**

Table 4.2.1 presents the mean and standard deviation values for three Likert-scale items related to students' use and familiarity with digital tools in academic writing. Item 1 assessed students' familiarity with digital tools. The results show a high mean score of 4.13 (SD = 0.782) on a Five-point Likert scale, indicating that most respondents are well-acquainted with digital tools relevant to academic writing tasks. This suggests that digital literacy among the participants is relatively strong, providing a solid foundation for effective tool use.

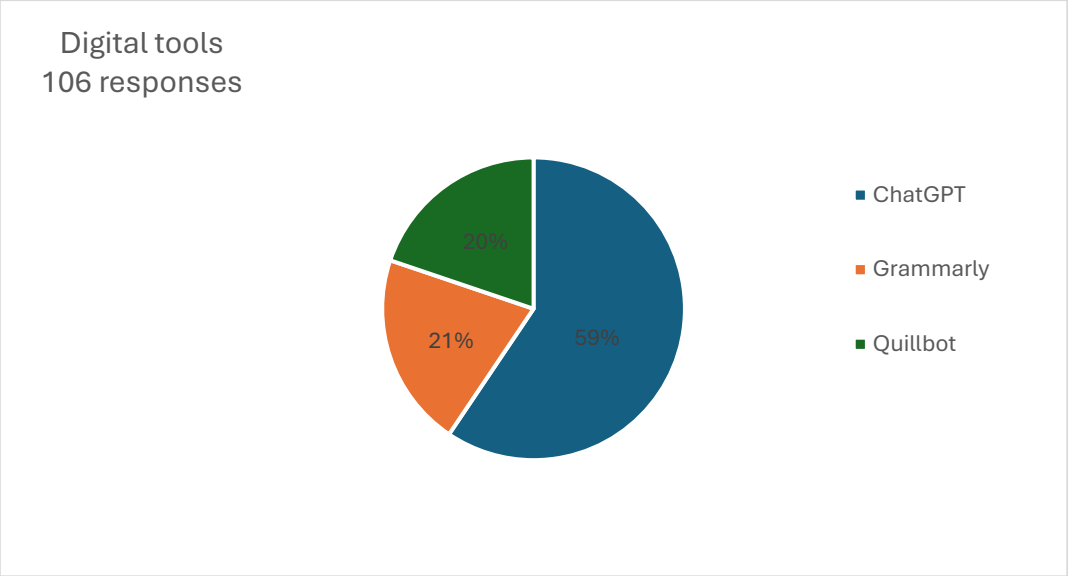
Item 2 measured the general frequency of digital tool usage. A slightly higher mean of 4.26 (SD = 0.747) was recorded, reflecting frequent use of such tools in daily academic and possibly non-academic tasks. The low standard deviation implies a strong consensus among respondents regarding their usage habits.

Item 3 focused on the specific context of academic writing tasks such as drafting, editing, and proofreading. The mean score of 4.10 (SD = 0.861) shows that digital tools are also widely used for academic writing purposes, although the slightly higher standard deviation implies some variability in how individual students integrate these tools into their writing routines.

4.3 Digital Tools that are Frequently Used

Participants were also asked to indicate the digital tools they frequently use when working on academic writing tasks. The responses revealed three commonly used tools.

Figure 4.3.1: Types of Digital Tools Used in Academic Writing



ChatGPT was the most frequently used, with 63 students (59%) selecting it. As an AI-powered assistant, it is often employed for idea generation, language refinement, and clarifying complex topics. Grammarly was selected by 22 students (21%), primarily for grammar checking and improving language accuracy. Lastly, QuillBot was used by 21 students (20%), valued for its paraphrasing capabilities. Together, these tools accounted for 100% of responses, highlighting their dominance in digital academic writing support. The findings suggest that students prefer tools offering real-time feedback, AI assistance, and ease of use, which support both the writing process and academic performance.

4.4 Research Question 1: Perceptions of the Effectiveness of Digital Tools in Academic Writing

Table 4.4.1 summarises the responses for items one to ten that are related to the students' general perceptions of how effective digital tools are in enhancing their academic writing skills.

Table 4.4.1: Descriptive Statistics for Perceived Effectiveness of Digital Tools in Academic Writing (Q1 – Q10)

Item	Statement	N	Min	Max	Mean	Std. Deviation
Q 1	Digital tools can help me generate ideas for my academic writing.	106	2	5	4.36	0.783
Q 2	Digital tools can help me prepare good outlines for my academic writing.	106	1	5	4.23	0.908
Q 3	Digital tools assist me in conducting research by gathering relevant sources for my academic writing.	106	1	5	4.09	1.010
Q 4	Digital tools like grammar and spell-check tools improve the quality of my academic writing.	106	1	5	4.36	0.819
Q 5	Digital tools feedback on writing style helps me revise and refine my academic writing effectively.	106	1	5	4.33	0.813

Q 6	Using digital tools in the academic writing process increases my confidence in the final product.	106	2	5	4.11	0.887
Q 7	Digital tools like translation tools facilitate cross-cultural communication in my academic writing.	106	1	5	4.09	0.991
Q 8	Digital tools can help me improve the clarity of my academic writing.	106	2	5	4.24	0.787
Q 9	Digital tools assist me in identifying and avoiding plagiarism in my academic writing.	106	1	5	3.83	1.230
Q 10	Overall, digital tools enhance my academic writing process.	106	2	5	4.32	0.763

The data reveal a generally high perception of digital tools' effectiveness in supporting academic writing among ESL learners at Universiti Tunku Abdul Rahman. Items Q1 and Q4 received the highest mean scores (4.36), reflecting strong agreement that digital tools help students to generate ideas and enhance their writing through grammar and spelling support. Q5 (Mean = 4.33) and Q10 (Mean = 4.32) further reinforce that students appreciate the revision support and overall enhancement provided by these digital tools. These findings are consistent with those of Ozfidan et al. (2024), who reported that Saudi undergraduates perceived AI tools like ChatGPT and Grammarly as highly beneficial in improving grammar accuracy, content organisation, and writing fluency.

However, unlike Ozfidan et al., whose participants expressed stronger confidence in the tools' ability to manage academic integrity concerns, the relatively lower mean for Q9 in the current study (Mean = 3.83) suggests that UTAR students remain more cautious about relying on digital tools for plagiarism detection. Overall, standard deviation values are from moderate to low, indicating a consistent perception among students with relatively few outliers in responses. These findings demonstrate that learners largely perceive digital tools as beneficial and supportive throughout various stages of the academic writing process.

4.5 Research Question 2: Contributions of Digital Tools to Academic Writing Performance

Table 4.5.1 reports the responses for the second set of items, which highlight the tangible contributions of digital tools to specific components of academic writing performance, such as organisation, time management, formatting, and motivation.

Table 4.5.1: Descriptive Statistics for Contributions of Digital Tools to Academic Writing (Q11 – Q20)

Item	Statement	N	Min	Max	Mean	Std. Deviation
Q 11	Digital tools help me save time during the academic writing process.	106	1	5	4.18	0.913
Q 12	I find digital tools suggestions for improving my academic writing to be helpful.	106	1	5	4.25	0.849

Q 13	Digital tools enhance my ability to meet academic writing deadlines effectively.	106	1	5	4.18	0.882
Q 14	Digital assist me in organising my ideas and arguments in academic writing.	106	1	5	4.15	0.913
Q 15	Digital tools increase the efficiency of the proofreading process of my academic writing.	106	2	5	4.22	0.756
Q 16	I feel more motivated to produce academic writing when using AI tools.	106	1	5	3.99	0.951
Q 17	Digital tools help me maintain consistency in formatting and citation styles in my academic writing.	106	1	5	3.83	1.134
Q 18	I trust digital tools and suggestions for improving the clarity of my academic writing.	106	1	5	4.11	0.939
Q 19	Digital tools offer valuable insights into improving the structure and organisation of my academic writing.	106	1	5	4.20	0.855
Q 20	I feel more confident in my writing abilities when using digital tools.	106	2	5	4.18	0.913

The results indicate that digital tools play a meaningful role in enhancing students' writing performance. The highest-rated item, Q12 (Mean = 4.25), suggests that time-saving is among the most valued contributions. Items Q15 (Mean = 4.22) and Q19 (Mean = 4.20) further affirm that digital tools assist with proofreading and structural development, two critical components of effective writing. Items related to confidence and trust in digital tools, such as Q11, Q13, and Q20 (all Mean = 4.18), indicate that the tools foster a sense of assurance in writing capabilities and deadline management. Q16 (Mean = 3.99) and Q17 (Mean = 3.83) received comparatively lower scores, suggesting that while tools help with motivation and formatting, these are areas where some users may still face limitations or uncertainty. These results parallel the findings of Rahman et al. (2023), who observed that Malaysian university students perceived AWE tools as highly beneficial for boosting writing confidence, improving structure, and managing time effectively.

In both cases, digital tools were seen as valuable not only for surface-level corrections but also for their broader support in planning and drafting. However, unlike the present study, which shows generally high levels of trust and confidence in digital tools, Utami et al. (2023) reported that some Indonesian students expressed doubts about the tools' ability to support deeper academic processes such as critical thinking and originality. This contrast highlights the importance of context and individual user expectations when interpreting the perceived effectiveness of AI-supported writing tools. In general, the findings support that digital tools not only streamline the writing process but also enhance learners' performance by offering structural, stylistic, and motivational support. Consistency in the data, indicated by standard deviation scores, further reflects agreement across the sample.

4.6 Semi-Structured Interview

This section presents a detailed analysis of the interview data gathered from ten undergraduate ESL learners at Universiti Tunku Abdul Rahman. The primary objective of the interviews was to explore the learners' perceptions of the effectiveness of digital tools and to identify their specific contributions to the enhancement of academic writing skills. The interviews were conducted online via the Microsoft Teams platform to ensure accessibility and convenience for all participants, and the data were analysed manually using thematic analysis. Before the interview, informed consent was obtained from each participant, and all sessions were recorded for accuracy in data analysis. The findings are organised according to the key themes aligned with the research objectives and are supported by relevant excerpts from participants' responses.

4.6.1 Usage Patterns and Functions of Digital Tools

To find out the usage patterns and functions of digital tools in academic writing among ESL learners, participants were asked about the tools they frequently used and their purposes. The responses showed that most participants preferred ChatGPT and Grammarly for their academic writing tasks. The majority of participants reported that ChatGPT was the tool they used most often. It was found out that Participants 1, 4, 5, 7, and 9 preferred the same tools.

"The digital tool that I frequently use in academic writing is ChatGPT. As you know, ChatGPT is an advanced digital tool which is an AI that can generate answers based on the questions given." Participant 1

"The digital tool that I frequently use is ChatGPT. For me, ChatGPT answers my questions in seconds; unlike Google, it provides a direct, synthesised response rather than just listing sources." Participant 4

"Normally, the tool I use is ChatGPT. It helps me with my assignment." Participant 5

"ChatGPT can solve my question, like restructuring my storyline or correcting my grammar." Participant 6

"Normally, I will use ChatGPT. It can help me solve the problem that I met." Participant 7

"ChatGPT. It can answer any of my questions in a second." Participant 9 and 10

Meanwhile, a few participants preferred using Grammarly, mainly for grammar and vocabulary correction.

"The digital tools that I use frequently in my academic writing is Grammarly. It helps me edit my vocabulary and grammar. I just need to insert my sentence, and it will automatically help me to check and correct my grammar mistakes." Participant 2

"Grammarly. Grammar and writing enhancement." Participant 3

"Normally, I use the free version of Grammarly in academic writing. The function of Grammarly is it help me correct my grammar." Participant 8

Overall, participants used these digital tools mainly for grammar correction, vocabulary enrichment, idea generation, sentence restructuring, and instant feedback. The main reasons for preferring these tools were their speed, ease of use, and more direct responses compared to traditional web searches.

4.6.2 Contributions to Writing Skills

Participants noted marked enhancements in multiple dimensions of their writing after incorporating digital tools into their process. Improvements were most pronounced in grammar accuracy, where tools like Grammarly caught subtle errors that previously went unnoticed; in sentence structure, as ChatGPT learners craft more varied and coherent sentences; in vocabulary enhancement, with both platforms suggesting more accurate or advanced word

choices; and in overall organisation, where participants received guidance on logical paragraph ordering and thematic flow., indicating that ChatGPT helped them organise complex content effectively.

"It helps me improve my sentence structure." Participant 5

"It replaces words with more advanced vocabulary." Participant 9

"It gives me suggestions on how to structure my ideas," Participant 4

Additionally, the immediate, real-time feedback provided by these digital tools was consistently praised by participants for not only enhancing their learning efficiency but also bolstering their writing confidence and promoting more effective self-revision.

"When I run into a writing problem, I just open my device, type my question, and it solves it immediately." Participant 6

4.6.3 Achieving Academic Writing Goals

Digital tools were universally viewed as instrumental in helping students meet both short-term and long-term writing objectives. Participants emphasized the key features, AI-suggestion idea generation, real-time grammar corrections, and plagiarism checks, as central to achieving their goals.

"Grammar correction and idea generation features of ChatGPT helped me achieve my goals." Participant 1

"Grammarly's AI suggestions and grammar correction were very effective." Participant 2

These findings suggest that beyond immediate error-correction, digital tools play a strategic role in fostering deeper understanding of academic writing conventions and supporting continuous improvement toward higher-level objectives.

4.6.4 Accessibility and Device Compatibility

Ease of access emerged as a critical factor influencing too, adoption. All participants agreed that both ChatGPT and Grammarly function seamlessly across laptops, tablets, and smartphones, enabling writing support whenever and wherever needed.

"ChatGPT is available on my laptop and phone, which makes it easy to use anytime." Participant 5

However, cost was a factor for most of the participants, as they preferred free tools due to the financial constraints.

"I prefer free tools for now, as I'm still a student." Participant 1

"For me, of course, I prefer free because I'm still a student and I'm not making any money yet." Participant 4

"Normally, I use the free version of Grammarly in academic writing." Participant 8

One participant expressed a preference for paid digital tools, citing their advanced features as beneficial for deeper exploration.

"I prefer paid tools, because normally paid tools come with exclusive functions." Participant 3

Despite these limitations, accessibility and ease of use were critical factors that influenced participants' choices of digital tools. The convenience of having these tools readily available across devices was seen as crucial for maintaining consistent and efficient writing support.

4.6.5 Alignment with Instructional Needs

Nearly all of the participants felt that the core functionalities of their chosen digital tools aligned closely with their academic writing course requirements, which helps them to improve in writing.

"Yes, it aligns with my academic writing requirements." Participant 1

"ChatGPT features align well with what my writing course requires." Participant 10

"Yes, I use Grammarly to assist me in almost every of my assignments." Participant 2

"Grammarly assists me in almost every assignment." Participant 6

Several participants mentioned that their lecturers recommended using digital tools like ChatGPT and Grammarly to them to support their writing tasks, suggesting that these tools complement traditional academic instruction and are in line with course requirements.

"Yes, my lecturer recommends ChatGPT." Participant 3

"They recommend Grammarly." Participant 5

"Yes, ChatGPT is recommended by my lecturers." Participant 9

The findings above indicated that digital tools are increasingly being integrated into academic settings, with lecturers actively endorsing their use to enhance students' writing skills. This suggests a growing institutional acceptance of such tools as legitimate aids in the learning process, rather than as shortcuts or replacements for critical thinking.

4.6.6 Flexibility, Adaptability, and Limitations

Participants praised the adaptability of digital tools across various assignment types, including essays, reports, and even full research papers, highlighting their usefulness in supporting diverse academic tasks. However, some limitations were also identified. One

participant pointed out that the free version of ChatGPT restricts the number of questions that can be asked per day, which can hinder productivity during intensive study sessions.

"The number of questions you can ask per day is limited." Participant 1

Another participant also mentioned that ChatGPT occasionally misunderstands more nuanced or complex writing prompts, which may affect the quality of the output.

"Sometimes ChatGPT misunderstands nuanced questions." Participant 6

Additionally, some participants reported that access to certain advanced features is often restricted by subscription paywalls, limiting the functionality of the tools for those who cannot afford premium versions.

"Sometimes the premium features are not accessible without paying." Participant 4

4.6.7 Most Valued Features

Among the participants, the most commonly valued features of digital tools included grammar correction, AI-generated writing suggestions, instant feedback, and plagiarism detection. These features were seen as particularly useful for improving the clarity, coherence, and originality of academic writing.

"Grammar and style suggestions helped improve my writing." Participant 3

"AI suggestions were the most useful in helping generate ideas." Participant 4

These features were seen as crucial for improving the quality of academic writing, particularly when students were working under tight deadlines. The combination of real-time support, vocabulary enhancement, and idea generation proved to be especially helpful.

4.6.8 Engagement, Motivation, and Satisfaction

The majority of participants expressed high level of satisfaction with their digital tool use, noting that these tools made academic writing more enjoyable, efficient, and less stressful.

"It makes writing more enjoyable and saves a lot of time." Participant 9

"Using Grammarly really helped me and made writing easier." Participant 8

The digital tools were also seen as motivation, with all participants indicating a strong desire to continue using digital tools in their future writing tasks.

4.6.9 Challenges and Disengagement

While participants overwhelmingly reported that positive experiences with digital tools, a few challenges were mentioned, including issues such as system errors, limitations on free versions, and occasional technical difficulties. However, these challenges did not significantly affect participants' overall engagement with the tools.

"If one day they are no longer free, it might affect my motivation." Participant 1

The findings above indicated that financial constraints could impact continued use. Nonetheless, no participants reported significant disengagement or boredom when using these tools, suggesting that their benefits far outweighed any occasional setbacks.

4.6.10 Recommendations

All participants stated they would recommend their preferred digital tools to their peers, particularly ChatGPT and Grammarly.

"I would definitely recommend ChatGPT to my friends because it is very useful." Participant 7

"I will recommend Grammarly because it helps improve writing and saves time." *Participant 8*

The unanimous endorsement underscores the perceived value of these tools in supporting academic writing development.

4.7 Conclusion

The interview findings demonstrate that digital tools, especially ChatGPT and Grammarly, are highly regarded by ESL learners for their ability to enhance academic writing skills. These tools contributed to improvements in grammar, vocabulary, sentence structure, and overall writing efficiency. The accessibility, speed, and real-time feedback provided by these tools were identified as key factors contributing to their effectiveness. Although some limitations were noted, such as restrictions on free versions and occasional technical issues, the overall response from participants was overwhelmingly positive, affirming the significant role of digital tools in supporting the ESL learners' academic writing development.

Chapter 5: Discussion and Conclusion

5.0 Introduction

This chapter presents a comprehensive discussion of the findings derived from both the quantitative and qualitative phases of the study. It interprets the results in relation to the research objectives and existing literature, highlighting the significance of digital tools in supporting the ESL learners' academic writing development. The chapter further outlines the practical implications of the study, acknowledges its limitations, and provides recommendations for future research. Through the application of a mixed-methods approach, a deeper and more nuanced understanding of the perceived effectiveness and contributions of digital tools to academic writing has been achieved, offering valuable insights for both academic and practical contexts.

5.1 Summary of Findings

This study employed a mixed-methods approach to explore ESL learners' perceptions of the effectiveness of digital tools in enhancing academic writing skills and to identify their specific contributions to academic writing performance. The quantitative data was collected through a structured questionnaire administered to 106 undergraduate ESL learners, while the qualitative data was gathered through in-depth interviews with ten selected participants. Together, these methods provided a comprehensive understanding of how digital tools impact the academic writing practices of ESL learners.

5.1.1 Quantitative Findings: ESL Learners' Perceptions of the Effectiveness and Functional Contributions of Digital Tools in Academic Writing

The quantitative phase of this study, which involved administering a survey to 106 undergraduate ESL learners, revealed a compelling narrative about how digital tools are perceived and utilised to enhance academic writing. The results, based on the 20 Five-Point

Likert-scale questions, suggest that these tools are widely acknowledged for their positive influence on various writing aspects, from idea generation to grammar correction and organisation. The mean scores from the survey reflect a remarkably high level of consensus among the participants, with most items showing responses clustered towards the agree and strongly agree end of the scale. However, the variability in responses, particularly for specific tools and their features, adds a layer of nuance to the overall picture.

First and foremost, several survey items achieved exceptionally high mean scores, signalling that the participants found ChatGPT and Grammarly to be invaluable assets. The tool's contribution to idea generation stands out prominently. Question 1 (Digital tools can help me generate ideas for my academic writing) recorded an outstanding mean score of 4.36 (SD = 0.783), marking it as one of the most positively received features of digital tools. This finding suggests that ChatGPT's ability to stimulate creativity by providing instant prompts and suggestions has a direct impact on the participants' writing process. Not only does it assist in overcoming writer's block, but it also sparks a flow of ideas, making the writing process feel more fluid and less daunting.

In a similar vein, Question 4 (Digital tools like grammar and spell-check tools improve the quality of my academic writing) also achieved a mean score of 4.36 (SD = 0.819), reflecting a consensus that Grammarly and similar tools are highly effective at enhancing the technical accuracy of academic writing, which is especially crucial in ESL contexts where language proficiency can be a barrier to success. This high rating emphasises the reliability and trustworthiness of digital tools for improving sentence-level grammar and mechanics, which ultimately leads to higher quality output.

Additionally, Question 5 (Digital tools feedback on writing style helps me revise and refine my academic writing effectively) also garnered strong support with a mean score of 4.33

(SD = 0.813), signalling that feedback on style and structure, rather than just grammatical corrections, plays a pivotal role in the writing process. This suggests that students not only appreciate tools for fixing surface-level errors, but also for their ability to enhance clarity, coherence, and flow. The real-time, actionable feedback empowers learners to refine their work, ultimately improving the overall quality of their writing.

While many aspects of digital tools were rated positively, several items received slightly lower mean scores (between 4.00 and 4.20), pointing to areas where digital tools are valued but perhaps not as indispensable. For instance, Question 2 (Digital tools can help me prepare good outlines for my academic writing) recorded a mean score of 4.23 (SD = 0.908). This suggests that while learners found digital tools useful for organising ideas and creating outlines, they might still rely on traditional methods like pen and paper or personal notes for prewriting tasks. This could reflect a preference for personalised approaches to planning that feel more intuitive, especially for more complex assignments such as research papers.

Similarly, Question 8 (Digital tools can help me improve the clarity of my academic writing) scored 4.24 (SD = 0.787), which is also fairly high but not as universally strong as the results for grammar correction. This moderate score hints at the limitations of digital tools in language processing, while helpful tools like ChatGPT and Grammarly might not fully capture the nuances of academic clarity or adapt to the individual voice of the writer.

Other items, including Question 11 (Digital tools help me save time during the academic writing process) with a mean of 4.18 and Question 12 (I find digital tools suggestions for improving my academic writing to be helpful) with a mean of 4.25, also reflect that the participants generally found digital tools to be time-saving and useful for improving their writing process. However, the slight variance in responses suggests that the effectiveness of

digital tools in time management and improvement might depend on the specific writing task at hand.

In contrast, a few items reflected lower levels of agreement, indicating more mixed perception or areas where students felt digital tools were not as effective. For example, Question 9 (Digital tools assist me in identifying and avoiding plagiarism in my academic writing) recorded the lowest mean score of 3.83 (SD = 1.230), with a wider standard deviation. This suggests that while plagiarism detection tools like Turnitin or Grammarly are commonly used, their effectiveness in identifying subtle forms of plagiarism or paraphrasing errors may not always be perceived as satisfactory. Given that plagiarism detection often requires advanced algorithms and human judgment, learners likely find these features somewhat limited, especially when dealing with complex academic language.

Similarly, Question 17 (Digital tools help me maintain consistency in formatting and citation styles in my academic writing) received a mean score of 3.83 (SD = 1.134). This finding indicates that while digital tools are helpful, citation management, particularly for different academic styles like APA or MLA, remains a challenging area. Students might still face difficulties ensuring absolute consistency in citations and formatting, or they may find that certain tools lack the depth required for academic writing's formatting precision.

5.1.2 Qualitative Findings: ESL Learners' Perceptions of the Effectiveness and Impact of Digital Tools on Academic Writing

The qualitative phase of this study brought forward a much richer, more personal view of how ESL learners experience digital tools in their academic writing. While the survey provided broad trends and numbers, the interviews allowed the participants' real voices to come through. Through these conversations, students shared not only how they used digital tools like ChatGPT and Grammarly but also how these tools shaped their writing journeys, sometimes

pushing them forward, sometimes holding them back. Their stories added depth, heart, and complexity to what might otherwise have been a straightforward picture.

It quickly became clear that ChatGPT and Grammarly were the two tools most participants leaned on. They didn't just describe these tools as helpful; they spoke about them almost like trusted companies in their academic journey. When they were asked about the tools they used most often, several participants immediately mentioned ChatGPT. They praised it for its ability to generate ideas quickly, clarify confusing topics, and even reshape sentences when they struggled to find the right words. As Participant 1 said, "The digital tool that I frequently use in academic writing is ChatGPT. As you know, ChatGPT is an advanced digital tool which is an AI that can generate answers based on the questions given." Similarly, Participant 4 emphasised how much easier ChatGPT made things, explaining, "For me, ChatGPT answers my questions in seconds; unlike Google, it provides a direct, synthesised response rather than just listing sources." But it wasn't just about saving time. Many participants pointed out that ChatGPT also helped them think differently, to see ideas they might not have thought of on their own. Participant 5 put it simply that "Normally, the tool I use is ChatGPT. It helps me with my assignment." It was clear that for many, these digital tools were doing much more than just correcting grammar; they were opening new pathways for learning and creativity.

Grammarly, on the other hand, was celebrated for its reliability and attention to detail. Participants like Participant 2 valued its ability to catch small grammar errors and polish vocabulary without much fuss. "The digital tool that I use frequently in my academic writing is Grammarly. It helps me edit my vocabulary and grammar. I just need to insert my sentence, and it will automatically help me to check and correct my grammar mistakes.". For students who worried about making embarrassing mistakes in their assignments, Grammarly offered a much-needed safety net, making their writing clearer, sharper, and more professional.

One thing that stood out in almost every interview was how much using digital tools boosted students' confidence. It wasn't just about fixing mistakes, it was about feeling like they had real support when they needed it most. Participant 6 captured this feeling perfectly, "When I run into a writing problem, I just open my device, type my question, and it solves it immediately.". For many ESL learners, writing in English can sometimes feel like climbing a steep hill without a map. Having a tool that could instantly offer help made a huge difference. It took away some of the fear and uncertainty and allowed students to move forward with greater ease.

Moreover, using tools like ChatGPT and Grammarly did not just make students better writers, it made them more active learners. Instead of blindly accepting corrections, many participants talked about how they started experimenting with suggestions, revising their sentences, and learning new ways to express their ideas. Participant 4 reflected that, "It gives me suggestions on how to structure my ideas.". This shift, from passive correction to active learning, was one of the most positive impacts of digital tools mentioned in the interviews.

The participants were honest about the limitations they faced. Some frustrations were technical. For example, Participant 1 mentioned feeling restricted by ChatGPT's usage limits, "The number of questions you can ask per day is limited.". For students working late into the night on assignments, running out of free questions could be a real roadblock. It interrupted their momentum and sometimes forces them to look for help elsewhere.

Others pointed to more serious limitations. Several participants noted that digital tools like ChatGPT sometimes misunderstood nuanced academic questions, giving answers that felt too simple or even off-topic. Participant 6 explained that "Sometimes ChatGPT misunderstands nuanced questions.". Similarly, when it came to things like plagiarism detection and citation formatting, students often felt that digital tools didn't quite measure up. Participant 3 pointed

out, “No. The assessment was not fully writing. It tested our skills on writing APA citations too.” These tools, for all their strengths, could not dully replace the critical thinking and judgement needed for higher-level academic writing, a reminder that technology can support good writing but cannot do all the work for the students.

Even with these challenges, the overall feeling toward digital tools was overwhelmingly positive. Students didn’t just tolerate using them, they embraced them. Participant 7 said without hesitation, “I would definitely recommend ChatGPT to my friends because it is very useful,” while Participant 8 agreed, adding, “I will recommend Grammarly because it helps improve writing and saves time.”. It’s clear that for many ESL learners, digital tools like ChatGPT and Grammarly are not just conveniences; they are essential companions that make academic writing less intimidating and more achievable. While no digital tool is perfect, the combination of accessibility, speed, and support offered by these platforms has fundamentally changed how students approach their work, and, more importantly, how they feel about their ability to succeed.

5.2 Discussion of Findings

The findings of this study resonate with existing literature, underscoring the pivotal role digital tools play in enhancing academic writing among ESL learners. Han et al. (2021) highlighted that technology-based self-regulated English learning strategies significantly contribute to writing proficiency. Similarly, AI-Samarraie and Saeed (2018) emphasised the benefits of cloud computing tools in collaborative learning environments. The current study corroborates these insights, revealing that participants experienced notable improvements in grammar accuracy, vocabulary richness, sentence structure, and overall writing organisation through the use of digital tools. A salient feature appreciated by participants was the provision of real-time feedback. This immediate corrective mechanism not only facilitated efficient revisions but also bolstered learners’ confidence. Hyland and Hyland (2019) discussed the

significance of feedback in L2 writing, nothing its impact on reducing writing anxiety and promoting learner autonomy. The present study's qualitative data align with this perspective, illustrating how instant feedback from digital tools like Grammarly and ChatGPT empowered students to take charge of their writing process.

However, the study also illuminated certain limitations inherent in these digital tools. Quantitative data indicated slightly lower mean scores for functionalities related to plagiarism detection and citation formatting (Mean = 3.83). Participants expressed concerns over the restricted access to premium features and occasional misinterpretations by AI tools when handling complex academic tasks. These observations suggest that while digital tools are instrumental in supporting foundational writing skills, they may fall short in addressing advanced academic writing challenges.

In summation, the convergence of quantitative and qualitative findings affirms that digital tools serve as indispensable aids in the academic writing journey of ESL learners, offering both mechanical corrections and cognitive support.

5.3 Implications of the Study

The implications of the study are multifaceted, impacting students, educators, institutions, and developers of digital writing tools. For students, the findings underscore the importance of leveraging digital tools not merely for surface-level corrections but as instruments for enhancing overall writing quality. Engaging critically with AI-generated suggestions can transform these tools into learning partners, fostering deeper understanding and skill development (Utami et al., 2023; Hidayat & Sujarwati, 2024).

Educators and institutions are encouraged to actively integrate digital tools into academic curricula. Structured workshops and hands-on training sessions can equip students with the skills to utilise platforms like Grammarly and ChatGPT effectively, mitigating over-

reliance and ethical concerns (Ozfidan et al., 2024). Moreover, providing subsidised or institution-wide access to premium features can democratise the benefits of these digital tools, ensuring that all learners, regardless of financial constraints, can enhance their writing proficiency (Rahman et al., 2023).

From a development standpoint, there is a clear need to refine digital tools to address the complexities of academic writing. Improvements in plagiarism detection algorithms, more robust citation-formatting modules, and the ability to offer nuanced, context-sensitive feedback would bridge existing gaps identified by learners (Utami et al., 2023; Miranty et al., 2023). Additionally, making premium features more accessible, whether through institutional licensing or tiered pricing, can minimise the educational impact of these platforms.

Collectively, these measures can transform digital tools from mere corrective instruments into comprehensive writing assistants, significantly benefiting the ESL learners. By fostering critical engagement, embedding purposeful training, and advancing tool capabilities, stakeholders can significantly enhance ESL learners' academic writing outcomes.

5.4 Limitations of the Study

While the study offers valuable insights into the effectiveness of digital tools in enhancing ESL learners' academic writing skills, several limitations must be acknowledged to provide a balanced interpretation of the findings. First, is the sample size, comprising 106 undergraduate ESL learners from a single private university, may limit the generalisability of the results. Although the sample provided useful perspectives, its homogeneity means that the experiences captured may not reflect the diversity found in other institutions, disciplines, or geographic regions. Future studies would benefit from including a wider range of participants to strengthen the external validity of the research.

Additionally, the reliance on self-reported data introduces inherent biases, particularly the possibility that participants may have offered socially desirable responses rather than fully candid reflections. Self-perception does not always align perfectly with actual behaviour or skill development, which could have influenced the reported effectiveness of the tools. Furthermore, the study focused exclusively on two widely known platforms, ChatGPT and Grammarly, potentially overlooking other emerging writing technologies such as ProWritingAid or Turnitin, each of which may offer unique features, challenges, and advantages that were not explored in this study.

Finally, it is important to consider the dynamic and rapidly evolving nature of digital tools, especially AI-based platforms. As technological advancements continue to reshape the capabilities of writing tools, the functionalities and user experiences discussed in this study may soon become outdated. This underscores the importance of conducting ongoing research to track changes over time, ensuring that academic recommendations remain relevant and reflective of current technological realities.

5.5 Recommendations for Future Research

Building upon the findings and limitations of the current study, several important directions for future research are proposed. First, future studies should expand the demographics to include learners from a variety of educational institutions, geographic regions, and academic levels. By incorporating a more diverse sample, researchers can enhance the generalizability of their findings and better understand how digital tools usage may differ across contexts.

Additionally, longitudinal studies would be valuable to investigate the sustained impacts of digital tools use in academic writing development over time. Tracking students' writing growth across multiple semesters could reveal patterns and long-term benefits or

drawbacks that are not immediately evident. Comparative analyses should also be conducted, exploring a broader range of digital tools beyond ChatGPT and Grammarly, including platforms focused on citation management, paraphrasing, and research assistance. Such studies would provide a more comprehensive picture of digital writing ecosystem available to ESL learners. Finally, future research should critically examine the potential risks of over-reliance on digital tools. Investigating whether heavy dependence on these tools diminishes critical thinking skills or writing independence can help educators develop strategies that encourage students to engage thoughtfully and maintain active control over their academic writing processes.

5.6 Conclusion

In conclusion, this study demonstrates that digital tools, particularly ChatGPT and Grammarly, are highly regarded by ESL learners for their ability to enhance various dimensions of academic writing. Through the use of mixed-methods approach, the study provided a clear and comprehensive understanding of how these tools contribute to improvements in grammar accuracy, vocabulary development, idea organization, and overall writing efficiency. Both the survey results and interview responses highlighted the positive role that digital tools play in boosting writing confidence and supporting independent learning.

While certain limitations exist, such as the sample size and the focus on only selected digital tools, the overall findings affirm that digital tools play a significant and transformative role in academic writing development of ESL learners. The study also reinforces the view that, when used critically and strategically, these tools can go beyond simple error correction to become effective supports for deeper academic skills.

Ultimately, thoughtful integration of digital tools into academic instruction holds strong potential to foster more confident, independent, and proficient writers, preparing ESL learners to meet the evolving demands of academic and professional communication in the digital age.

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Appendix

Appendix 1 - Online Questionnaires

Section B

1. Are you familiar with digital tools that can assist you in academic writing?
2. You frequently use digital tools.
3. You frequently use digital tools in academic writing.
4. Digital tools that you frequently use in academic writing.

Section C

1. Digital tools can help me generate ideas for my academic writing.
2. Digital tools can help me prepare good outlines for my academic writing.
3. Digital tools assist me in conducting research by gathering relevant sources for my academic writing.
4. Digital tools like grammar and spell-check tools improve the quality of my academic writing.
5. Digital tools feedback on writing style helps me revise and refine my academic writing effectively.
6. Using digital tools in the academic writing process increases my confidence in the final product.
7. Digital tools like translation tools facilitate cross-cultural communication in my academic writing.
8. Digital tools can help me improve the clarity of my academic writing.
9. Digital tools assist me in identifying and avoiding plagiarism in my academic writing.
10. Overall, digital tools enhance my academic writing process.
11. Digital tools help me save time during the academic writing process.
12. I find digital tools suggestions for improving my academic writing to be helpful.

13. Digital tools enhance my ability to meet academic writing deadlines effectively.
14. Digital tools assist me in organizing my ideas and arguments in academic writing.
15. Digital tools increase the efficiency of the proofreading process of my academic writing.
16. I feel more motivated to produce academic writing when using AI tools.
17. Digital tools help me maintain consistency in formatting and citation styles in my academic writing.
18. I trust digital tools and suggestions for improving the clarity of my academic writing.
19. Digital tools offer valuable insights into improving the structure and organization of my academic writing.
20. I feel more confident in my writing abilities when using digital tools.

Appendix 2 - Interview Questions

1. How do digital tools contribute to improving your academic writing performance?
2. In what ways do digital tools enhance your writing skills?
3. Which digital tools do you find most effective in achieving your academic writing learning objectives?
4. What specific digital tools do you believe improve the overall quality of your writing?
5. Which digital tools are most accessible for use in academic writing?
6. Do the features of digital tools effectively align with the instructional requirements for academic writing?
7. Which digital tools do you consider flexible and adaptable for academic writing tasks?
8. What specific features of digital tools do you find most useful for academic writing?
9. Do you enjoy using digital tools to support your academic writing?
10. How do you feel when engaging with digital tools in the context of academic writing?
11. Are you motivated to learn and improve your academic writing skills using digital tools?
12. Do you ever feel disengaged or uninterested when using digital tools for academic writing?

Appendix 3 – Interview transcript

Meeting in _FYP Interview 1_-20250423_175154-Meeting Recording

CW **I**

Good afternoon, George.

Thank you for taking your time today to have this interview with me. So, as you know, I'm going to have an interview with you for my research topic, which is Using Digital Tools in Academic Writing Among Undergraduate ESL Learners in Private Higher Institution.

So I'm very excited to hear your thoughts and experiences. So, so far, is everything clear?

G **R**

Yes.

CW **I**

OK, so now I'm going to ask the digital tool that you use.

What digital tool do you frequently use in academic writing?

G **R**

The digital tool that I frequently use in academic writing is ChatGPT.

CW **I**

OK, can you tell me what the main purpose or function of ChatGPT?

G **R**

As you know, ChatGPT is an advanced digital tool which it is an AI that can generate answers based on the questions given.

CW **I**

I see. Why do you prefer using ChatGPT over other digital tools?

R

This is because ChatGPT is a free app that is easy to use and understand.

I

OK, that's good to know. So now I'm going to ask about the contribution of digital tools to writing skills.

How have ChatGPT helped you to improve your academic writing?

R

ChatGPT helps me in improving my academic writing, especially in grammar.

I

So, in what area have you noticed improvement? For example, grammar, vocabulary, sentence structure, or organisation.

R

I would like to say ChatGPT actually helped me in all aspects that you mentioned above just now.

I

Great. In that case, do ChatGPT influence your writing efficiency, confidence or learning process?

R

Yes, it does.

I

Has instant feedback from ChatGPT enhanced your writing development?

G **R**

Yes, ChatGPT has enhanced my writing development.

CW **I**

I see, so which digital tools do you find most effective for achieving your academic writing goals?

G **R**

ChatGPT for sure.

CW **I**

It sounds quite useful for you. For you, what specific features make it effective?
For example, grammar correction, plagiarism detection, AI suggestions or others?

G **R**

So the specific features of ChatGPT that make my writing effective, I would like to say, are the grammar corrections and also the idea generation features.

CW **I**

OK. So, have you compared ChatGPT with other digital tools?

G **R**

Yes, I've compared ChatGPT with Quillbot

CW **I**

Really? So, how do the most effective ones stand out?

G **R**

ChatGPT has many features, for example, idea generation and grammar checking. Unlike Quillbot, mainly for paraphrasing and summarising.

CW **I**

That's good to know. Now let's move to the next section, which is the accessibility of digital tools. So, which digital tools are the most accessible for you?

G **R**

Still ChatGPT.

CW **I**

Has easy access to this tool make it easier for you to improve your writing?

G **R**

Absolutely. Whenever I run into a writing problem, I simply open my device, type my question into ChatGPT, and it provides a solution for me instantly, anytime, anywhere.

CW **I**

OK. Is ChatGPT available across different devices, like laptop or phone?

G **R**

Yes, it is available to use across different devices.

CW **I**

Do you prefer free or paid digital tools?

G **R**

I prefer free tools for now, as I'm still a student.

CW **I**

I see. Has your university provided access to any digital writing tools?

G **R**

Nope.

CW **I**

Do the features of ChatGPT align with what your academic writing course requires?

G **R**

Yes.

CW **I**

How well does ChatGPT support key writing skills like coherence, structure, and vocabulary?

G **R**

ChatGPT provides strong support for coherence, structure, and vocabulary by giving suggestions on word choices and organisation.

CW **I**

I see. Have your lecturers recommended any tools?

G **R**

ChatGPT.

CW **I**

Great. Which digital tools are most flexible and adaptable for academic writing tasks?

G **R**

ChatGPT for sure.

CW **I**

Interesting. So can they be used across different types of assignments like essays, reports, or research papers?

G **R**

Yes, of course. As I mentioned earlier, ChatGPT can address fundamental writing elements like organisation, idea generation and so on.

CW **I**

Do they allow personalisation or integration with other platforms?

G **R**

Yes, it allows. You could key in or insert the question, and it will help you to generate the answers based on what you mentioned or the question you have given.

CW **I**

Sounds great. Have you faced any limitations when adapting ChatGPT to your writing needs?

G **R**

Yes, I faced two limitations when using ChatGPT. The first limitation I would like to mention is the number of questions asked per day. So, it has a certain limit, and it sometimes will have a system down problem.

CW **I**

Oh, so what specific features of ChatGPT do you find most useful for academic writing?

G **R**

I would say grammar checking.

CW **I**

Have grammar and style suggestions helped improve your writing?

G **R**

Yes, it does.

CW **I**

Do you use features like plagiarism detection or citation generators?

G **R**

I do use the citation generators just for checking purposes.

CW **I**

Oh, so do these features enhance the quality and efficiency of your writing?

G **R**

Yes, my writing qualities and efficiency have improved a lot due to the help of these tools.

CW **I**

Do you enjoy using ChatGPT for academic writing?

G **R**

Yes, because it makes writing easier.

CW **I**

In that case, do you feel that it makes writing more enjoyable?

G **R**

Yes, of course. With ChatGPT, writing is not just easier, it is more engaging, and I feel immersed in an amazing world whenever I compose with its help.

CW **I**

OK. So overall, how satisfied are you with your experience using ChatGPT?

G **R**

If you ask me to rate ChatGPT, I will rate it 100 out of 10.

CW **I**

Wow, such a high score. The next question is, are you motivated to use ChatGPT to improve your academic writing?

G **R**

Yes, because it is easy to use.

CW **I**

Do you see yourself continuing to use ChatGPT in the future?

G **R**

Definitely. I will continue using it in my future because it is a vital tool in my future, as it will be helpful, particularly in my career.

CW **I**

Are there any challenges that reduce your motivation to use it?

G **R**

Other than those limitations, I would like to say that the premium policies, as we need to pay more to unlock other features.

CW **I**

Understood. Have you ever felt bored or uninterested when using ChatGPT for writing?

G **R**

Nope so far. I feel enjoyment while using it for writing.

CW **I**

Great to hear that. Do any tools feel overly complex or repetitive to you?

G **R**

Yes, the citation generator, because some of the articles cannot be cited from the generator.

CW **I**

Oh, have any tools failed to meet your expectations?

G **R**

Yeah. As I mentioned earlier, the citation generator tool.

CW **I**

Do you sometimes prefer other learning methods over digital tools?

G **R**

No, because I found that ChatGPT is much, much, much more convenient for me.

CW **I**

So, the last question: Would you recommend ChatGPT to your friend?

G **R**

Absolutely. I would recommend this to all my friends surrounding me.

CW **I**

Why?

G **R**

Because it is easy to use, easy to understand, and it can help you generate more ideas based on one of the points you have given. It is very convenient.

CW **I**

That’s good to know. Thank you. That's all for my questions. Thank you so much for sharing your thoughts and experience. This would really help my research; I appreciate it a lot. See you when I see you.

G **R**

Ok, thank you.