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**An Analysis of Students' Views about Developing Self-correction Strategies  
through ICTs in the Process of Writing Master's Dissertation  
at Mouloud MAMMERI University of Tizi\_ Ouzou**

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# ***DEDICATIONS***

I dedicate this work to my father, who supported me throughout this project, and my mother, who always believed in me.

To my brother Azouaou, and my sisters Lila and Yasmine, for their constant encouragement and love and to my little princesses, Alicia and Anais, who bring joy and meaning to my life.

Thank you all for being my strength and inspiration.

Kahina Arezki

I dedicate this work to my parents, for their constant support, and to my little sister Sarah, for her encouragement. Thank you for everything.

Amina Aouni

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## **Abstract**

This dissertation explores master's students' views on developing self-correction strategies using ICTs in the process of writing their master's dissertations in the Department of English at MMUTO. The study aims to achieve two main objectives. Firstly, it seeks to explore the types of ICT tools adopted by these students for self-correction in their academic writing. Secondly, it examines the factors that determine the acceptance or rejection of these tools. To reach these objectives, we adopted Davis's Technology Acceptance Model (TAM, 1989) as the theoretical framework. This investigation is based on a mixed-methods research approach, combining both quantitative and qualitative methods. Data were collected through an online questionnaire administered to 53 students and a structured online asynchronous interview conducted with 6 students in the Department of English. The quantitative data were analyzed using descriptive statistical methods, while the qualitative data were analyzed using qualitative content analysis (QCA). The findings of the study reveal that the students have positive views on developing self-correction strategies using ICTs in their academic writing. Moreover, the results show that students rely on various tools, which they selected based on their ease of use and perceived usefulness. These factors significantly influence students' acceptance of these tools. Conversely, the factors driving students to reject these tools include challenges that contrast with the factors favoring their acceptance.

**Key words :** ICTs , Self\_correction strategies , academic writing .

### **List of abbreviations**

- **AI** : Artificial Intelligence
- **Apps** : Application Software
- **AWE** : Automated Writing Evaluation
- **CBEA**: Computer Based Error Analysis
- **CEA** : Computer Error Analysis
- **CLC** : Computer Learner Corpora
- **EA** : Error Analysis
- **EFL**: English as a Foreign Language
- **H** : Hypothesis
- **ICTs** : Information and Communication Technologies
- **M2** : Master Two
- **MMUTO**:Mouloud MAMMERI University of TIZI-OUZOU
- **p.** : page
- **PEOU**:Perceived Easeof Usefulness
- **PH. D** : Doctor of Philosophy
- **PU** : PerceivedUsefulness
- **Q** : Question

- **QCA** : Qualitative Content Analysis
- **TAM** : Technology Acceptance Model

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# **General Introduction**

## **Statement of Problem**

In the digital era, information and communication technologies, including computers, the internet, interactive applications, and platforms, play a crucial role in higher education, particularly in enhancing the writing process. While ICT is an essential tool for enhancing writing instruction, Melor and Yunus (2007) argue that ICT also fosters learner autonomy by aiding in the development of self-correction strategies. In essence, these technological tools enable EFL learners to address and correct their mistakes independently.

Using ICT as a learning tool in the writing process, especially during the revising and editing stages, offers significant benefits for learners. Understanding the relationship between ICT and error correction is crucial for both students and educators, given the shift from traditional to modern educational settings. Previous research underscores the importance of integrating technology into EFL learning.

For instance, Burston (2001) explored the potential of computer grammar checkers in improving self-monitoring strategies among advanced French students. His study highlighted that "Le Correcteur 101" was particularly effective at detecting and correcting common errors, such as spelling, noun gender, adjective/past participle agreement, subject/verb agreement, verb conjugation, and incomplete negation.

Similarly, Lai and Zhao (2006) investigated the use of text-based online chat to enhance learners' awareness of their errors based on feedback from their interlocutors. Their findings indicated that text-based online chat is more effective than face-to-face conversation in helping learners notice their linguistic mistakes.

In a more recent study, *The Application of ICTs in Error Correction in Written English*, conducted by Indhira et al., a two-phase test was administered. The pre-test was conducted without ICT training, while the post-test involved instructions on using specific technological tools, such as websites. The results revealed a notable reduction in errors after the students received ICT training.

While these studies have examined the role of ICTs in writing skills, particularly in developing self-correction strategies, there has been less attention given to how technology affects students' abilities to correct mistakes and errors during dissertation writing. Therefore, this research seeks to address the gap in understanding how ICT usage impacts the development of self-correction strategies during the master's dissertation writing process at the University of Mouloud Mammeri, Tizi-Ouzou.

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### **Aims and significance of the study**

The main purpose of this study is to analyze students' views on developing self-correction strategies through ICTs in the process of writing a master's dissertation at the University of Mouloud Mammeri, Tizi-Ouzou. The study has two main objectives. First, it explores the types of ICT tools that students use to correct their errors and mistakes. Second, it examines students' experiences, including the benefits and challenges of using ICTs for self-correction in dissertation writing.

Investigating the relationship between ICTs and the development of self-correction strategies in the process of writing a master's dissertation is important. It enhances the quality of the dissertation by providing instructions and suggestions. Additionally, it supports learners' autonomy to identify and rectify errors independently. Finally, self-correction skills are essential for academic success and lifelong learning.

## **Research Questions and Hypothesis**

To gain a clearer understanding, we need to address the following key questions:

- What ICT tools do master's students at MMUTO use for error correction during dissertations writing?
- What are the benefits and challenges that students face when using ICTs to identify and correct errors during the dissertation writing process?

The following hypotheses are suggested to answer the previous question:

- Hp1: second-year master's students at UMMTO use multiple tools to identify and correct errors including websites, applications, and AI tools.
- Hp2: While ICTs enhance the writing process, students face significant challenges, especially due to insufficient training.

## **Research techniques and methodology**

To conduct this study, we have embraced a mixed-method approach that incorporates both qualitative and quantitative methods for data collection and analysis. Data is collected using two instruments: the first is a questionnaire designed to understand Master 2 students' views on using ICTs to identify mistakes in their dissertations, particularly at Mouloud Mammeri University; the second is interviews aimed at gaining a deeper understanding of students' thoughts on using ICTs. The information collected will be analyzed quantitatively using descriptive statistical analysis and qualitatively using content analysis.

This study adopts ‘the Technology Acceptance Model ‘(TAM), proposed by Fred Davis in the late 1980s to understand the way students’ think about technology and why they want to use it.

### **Structure of the dissertation**

The present research follows a traditional structure, consisting of a general introduction, four main chapters, and a general conclusion. The general introduction includes the statement of the problem, the overall aim and significance of the research, research questions and hypotheses, research techniques and methodology, and the structure of the dissertation. The first chapter is a review of the literature, which covers the meaning, information, and knowledge related to the study. The second chapter, on research design and methodology, details the procedures used to collect data. The third chapter presents the findings, involving the presentation and analysis of the results gathered through data collection. Finally, the fourth chapter discusses the findings, offering clarification on the research topic and providing clear answers to the research questions.

# **Chapter I: Review of the literature**

The literature review chapter focuses on existing research related to developing self-correction strategies through ICTs in the process of writing master's dissertations. It aims to provide a comprehensive understanding of the key elements and concepts underlying our topic, including ICTs, self-correction strategies, and the dissertation writing process. By examining previous studies in this field, we aim to identify what is already known and determine gaps or areas where our research can contribute.

## **1. ICTs**

### **1.1 What is ICTs ?**

Information and Communication Technology (ICT) involves obtaining, managing, storing, and sharing voice, images, text, and numerical data through a blend of computing and telecommunications technologies based on microelectronics (Karl, 1961).

Building on the initial definition, Professor Verma (2023) from describes ICTs as technologies used to store, access, send, and handle information. This term covers a wide variety of technologies, devices, and systems that support the collection, processing, storage, and distribution of information.

### **1.2 Components of ICTs**

Kuldeep Verma (2023) identifies five key components of Information and Communication Technology (ICT): hardware, software, data, networks, and people. According to Verma, these components work together to form an ICT system that can be used to store, process, and communicate information based on the needs of an organization or individual. He explains these components as follows:

- **Hardware** : The physical elements of an ICT system, such as computers, printers, and routers.
- **Software** : The programs that run on the hardware, including operating systems, applications, and middleware.
- **Data** : The information stored and processed by the ICT system, which can include text, images, and videos.
- **Networks** : The connections that enable communication between hardware and software, such as the internet and local area networks.
- **People** : The users and administrators who operate and maintain the ICT system.

### 1.3 ICTs and EFL Learning

The incorporation/introduction of ICT to EFL teaching and learning can be seen as a revolution. It has significant impact on language teaching and learning. Different Interactive apps, online platforms, virtual classrooms...etc., have enriched the learning experience. The potential of incorporating ICT's to learning and teaching process was highlighted by many scholars and experts in the field. C. Savenye (2000) explained the gradual integration of ICT's to education initially, by traditional computers in a small scale in 1970, then through using personal computers in schools. The continuous progress of technology leads to the integration of various computer-based interaction tools over time, such as interactive videos, multimedia, hypermedia, web-based communication tools, and world-wide-web and distance education.

Chapelle (2003), discussed the potential of integrating technology to English language learning. In their view, Technology provides an enhanced input by incorporating various

tools like images and videos which enable the learners to understand the exact meaning expressed in the target language which transforms what they read or hear into potential language lessons. Furthermore, it allows for interaction, particularly by adapting Computer Assisted Language Learning. This helps learners in constructing and negotiating meaning, obtaining enhanced input and practice language. Finally, it promotes linguistic production by developing speaking and writing skills through providing several tools as online dictionaries and software.

Stanley (2013) discusses how technology can be utilized in language teaching and learning for various purposes, such as accessing information, gaining exposure to the target language, providing entertainment, creating text, and facilitating communication and interaction with other language users or learners. Many educators have embraced technology because it increases student motivation and engagement. Additionally, the Internet enhances learners' autonomy and offers access to a range of authentic materials. It functions not only as a repository of information but also as a tool for synchronous and asynchronous interaction and collaboration. Furthermore, it allows learners to publish their work through platforms like blogs, wikis, and class web pages, positively impacting both the quality and quantity of their written outputs.

Kavitha (2023) highlighted the benefits of using technology in language learning, noting the following: Technology has made language learning more engaging and enjoyable by sparking a desire to learn. It allows learners to connect with others online without leaving their homes, helping to build and maintain relationships with people worldwide without any geographical barriers.

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Tylor (1980) identified three main ways computers are used in education, categorized as tutor, tool, and tutee.

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- 1. Computer as a Tutor:** This refers to the computer acting like a teacher by motivating students, providing necessary information, and giving feedback.
- 2. Computer as a Tool:** The computer serves as a resource provider, offering access to a range of materials (such as written, visual, and audio content), thereby giving learners access to authentic resources.
- 3. Computer as a Tutee:** In this context the computer itself is programmed or guided by the learner, which involves giving the computer instructions and requires some programming skills.

## **2. Self-correction strategies and ICTs**

Different authors have explored the concept of “self-correction” in various ways. According to BusyTeacher.org (2018), self-correction involves students correcting their own mistakes rather than relying on the teacher to do so. This process occurs naturally in both first and second language learners, and in both spoken and written forms of language. The ability to self-correct provides significant advantages to learners.

Makino (1993) claimed that, in the process of language learning, learners sometimes notice and correct their own errors or do so with minimal guidance from teachers or peers. His study concluded that learners can correct their errors even without direct hints from teachers, emphasizing that learners are active participants in their own feedback process rather than passive recipients.

Balderas and Caumatzi (2018) highlighted the benefits of self-correction strategies, noting that they increase students' awareness of their errors, allow them to correct mistakes

independently, and foster greater responsibility for their own learning. These strategies also enable learners to focus on their specific errors, as teachers often have limited time to address individual mistakes due to the need to address more common errors.

As mentioned in the previous review, self-correction strategies are essential in EFL learning, and integrating ICTs into this field makes the process more effective and manageable. Many studies have examined the relationship between ICT tools and error correction from various perspectives. Gaemi and Bayati (2021) conducted an experimental study on the use of white smoke writing software to improve EFL learners' writing skills. The study concluded that such software can enhance students' knowledge of writing components, including spelling, grammar, and punctuation. Similarly, Al Ahdal (2020) noted that the advent of computer learner corpora (CLC) in the 1990s prompted the adoption of Computer-aided Error Analysis (CEA), an artificial intelligence proofreading method designed to identify and correct writing errors. AlAhdal (2020) noted that learners make various types of errors while writing, and the process of error analysis is crucial. He suggested that using software for this process can significantly enhance its effectiveness. Lawley (2015) also conducted a study on grammar checker software, reporting that it assists students in self-correcting their essays. Participants in the study noted that grammar checkers accelerated the self-correction process and made it quicker.

Similarly, Behjat (2011) compared between teacher and word processor correction to know which feedback improve EFL students writing skills. The study showed that using word processor is more beneficial for learners as the teacher only need to focus on content and organization. Additionally, Behjat reported that from a psychological perspective, it is encouraging for the students to identify their errors by the computer. However, marking the mistake with a red pen impact negatively the learners' performance.

Finally, Abuseileek (2006) showed that the word processor has a significant effect on teaching and learning of writing skill. EFL learners have the chance for self-learning which make them more independent from the teacher. They are also able to discover and correct their errors by themselves using different word processor apps such as: checking grammar, style and spelling errors, editing text and using punctuation marks.

### 1.1 ICT's tools used in self -correction

Many ICTs tools may be adopted for self-correction in the writing process. According to the Cambridge dictionary software, it is defined as the programs in a computer to perform different tasks. While word processing is described as the process of creating and managing documents, letters and other texts in electronic format on a computer

The first tool as stated by David Hartshorne (2023), is grammar checker. This instrument refers to an application or a software platform used to correct grammar mistakes, spelling errors in order to improve student's cohesion and coherence while they are writing. Additionally, grammar checker tool can be classified into subcategories depending on the purpose and measures, such as:

- **Grammarly:** A device used to identify grammar and punctuation mistakes in order to correct them

- **Wordtune:** A tool for rewriting, shortening or expanding content
- **Prowritingaid:** Used to evaluate reports to help students and writers improve their writing skills
- **Microsoft editor:** It is an application where a learner may check on things like adjective order, passive voice, adverb placement, to make your writing more regular.
- **Word rake:** Used to make things clear, simple, brief, and also eliminate unnecessary descriptive terms or delete informal language to be more qualified
- **Language tool:** Is a multilingual grammar, style, and spell checker with an AI-powered sentence rephrase and custom style guide.

Similarly, AlAhdal (2020) discussed Computer Based Error Analysis. This is an artificial intelligence (AI) proofreading method which is helpful to identify and correct writing errors. He listed fifteen of the most popular and largely freely available tools.

- **Grammarly:** One of the most extensively used syntax checkers, utilized by a huge number of individuals is Grammarly. It fixes more than 150 types of errors like grammar, punctuation, word structure, writing style, logical spelling, and sentence structure, flagging errors as soon as the content is entered.
- **ProWritingAid:** This tool can investigate text writing to eliminate any irregularities, vague wording, repetitiveness, passive voice, sentences that are too complex, and much more. ProWritingAid does this by producing 25 reports: style of composition, structure of language, overused words, platitudes and redundancies, pronouncements, advances, consistency, understandability, unclear and theoretical words, similar sounding word usage, homonyms, corporate wording, abbreviations, complex words and plagiarism.

- **WhiteSmoke:** It can produce a report that will analyze and score a composition in addition to checking material for errors. Rating is measured in six distinct classes: structure of sentences, expressions, phrases, tone, span, and repetition. In addition to the fact that it corrects content, it offers tips for writing text upgrades.
- **Ginger Online:** It helps users in detecting errors and improving their writing flaws, especially if English is their second language. There are three versions available for Ginger: Free, Basic and premium.
- **LanguageTool:** Since Language Tool can detect and correct grammatical mistakes in different languages, it stands out from the competition. Though this tool does not provide loads of features, even the available features work well. This tool is claimed to have the ability to correct grammatical errors that no other system can detect.
- **GradeProof:** Is an advanced artificial intelligence proofreading tool. On account of AI, one's writing makes the tool smarter. The more we write, the better it can provide smart suggestions for enhancing the writing. This program corrects grammar errors, spelling errors, and suggests rephrasing sentences.
- **Hemingway:** It is one of best CEA tools for teachers not just to find and correct mistakes in writing text provided by students but also in scoring the level of clarity of the text. One of Hemingway's additional features is that it additionally counts the number of adverbs in the content. It also tallies passive voice constructions and proposes what number one should utilize, in light of the article's highlights. But it has its own weakness: it does not test or fix grammatical errors.
- **Reverso:** This is an ease to use error analysis tool. It encourages one to accomplish a decent degree of composing capability by redressing even the most awkward errors quickly and efficiently. It gives various applicable revisions and users are recommended to choose one of them as indicated by the setting of composition.

- **PaperRater:** Is a good option for speedy grammar checking. It takes only a few seconds to edit text once it is typed. It utilizes AI and information science innovation to dive deep into the sentence and linguistic structure to empower constant content examination. This app also checks for punctuation errors, wrong spelling, word usage, sentence length, passive voice, and even for plagiarism. It also has a different Vocabulary Builder device that recommends words that improve the sentences.
- **Online Correction.com:** This tool can undertake grammar checking, detect stylistic issues, and identify spelling mistakes. While it just works with English, it can look at different varieties, such as British English, New Zealand English, Australian English, South African English, and American English.
- **Spell Check Plus:** This is a teacher as well as learner friendly tool as it not only checks the errors in several stages, it also gives learners reasons behind their writing mistakes and prevents them from committing the same errors again.
- **Virtual Writing Tutor:** This tool is designed especially for EFL teaching. It helps users check punctuation, spelling, and grammar, self-examine target structure usage, improve English pronunciation proficiency, calculate word count, enhance word selection, and assess paraphrasing.
- **Slick Write:** This is also a speedy checker but for long writing text should be divided into smaller units to take advantage of the quick editing results.
- **AutoCrit:** It helps in getting rid of common errors in writing styles. Other functionalities include eliminating excessive use of adverbs, removing unnecessary filler words and phrases and clichés, and removing redundancies.
- **After the Deadline:** AI and natural language processing technology is used in this tool for checking grammar, writing style, and spelling and to offer relevant suggestions

### **1. Potential and Limitation of ICTs tools used in self-correction:**

According to Benalileche and Kaouache (2021) the implementation of computer programs in Algerian EFL learning is an obligation for developing language skills. Particularly, using the software Grammarly to help students to identify and correct errors especially when writing master dissertations.

The advantages and disadvantages of using Grammarly were summarized by the authors as follows:

Firstly, the software provides valuable feedback that helps students learn more effectively. Additionally, it's easy to download and students can quickly revise their work and focus on their mistakes for future writing tasks. Then the fast evaluation speed means learners can easily access their assessment results without hassle. The checking process is swift, saving both students' and teachers' time and effort in assessing and revising academic work. Finally, Grammarly stands out as a completely free tool, making it very accessible to students. It is also considered better than other free automated writing assessment tools due to its superior features. However, Grammarly has several limitations despite its advantages. Firstly, it may alter the intended meaning of a paragraph by suggesting changes that lead to different interpretations of the text. Additionally, the software tends to over-evaluate elements in reference lists, such as names, titles, and article details, which can be excessive. Grammarly also struggles to assess the content and context of the writing, focusing only on grammar and mechanical errors without addressing the overall coherence and cohesiveness of the text. As a result, while it helps with grammatical accuracy, it does not contribute to the clarity and flow of the writing.

Miriappen et al. (2022) have reviewed the strength and weaknesses of CBEA. CBEA is featured by accuracy and precision. Besides to ease of use, it requires less effort with an

instant analysis as opposed to manual EA. It saves teachers' time and analyze a large amount of data in a short period. However, CBEA demonstrated some limitations such as inability to analyze higher level of errors especially in long complex sentences. Another limitation is that one application is insufficient to detect all errors in a document. Moreover, CBEA is unable to identify content and error coherence. In addition to the autocorrection where certain errors are automatically corrected by the software without the authors' knowledge or the feedback provided sometimes deviates the meaning of the sentence. Finally, CBEA is more diagnostic as it does not identify the causes of error or how to overcome it.

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### **3.Academic Writing :**

#### **1. What is Academic Writing ?**

Academic writing is crucial for students' academic success. Many scholars provided different explanations and clarifications to define it. Firstly, Oshima and Hogue (1997, p.3) stated that academic writing is the kind of writing used in high school and college classes. Academic writing is different from creative writing, which is the kind of writing you do when you write stories. It is also different from personal writing, which is the kind of writing you do when you write letters or emails to your friends and family. Creative writing and personal writing are informal, so you may use slang, abbreviations and incomplete sentences. However, academic writing is formal, so you should not use slang or contractions. Also, you should take care to write complete sentences and to organize them in a certain way.

Academic writing involves several sub-genres and every single genre differs from one another according to its purpose and goal. According to Hyland's definition (2007; 46) the term genre is used as a mean of "grouping texts together, representing how writers typically use language to respond to recurring situations". In a simple way, this term/genre is used as a technique or a strategy to organize texts and demonstrate how writers use language to deal with

frequent circumstances. Therefore, the most common types of genres that master two students must know are theses and dissertations.

### **3.2 Theses and dissertations**

The concepts of “theses” and “dissertations” represent key forms of academic writing, each reflecting what learners have acquired and learned. The interpretation of these terms can vary depending on the educational system. For example, at most UK universities, a thesis is associated with a Ph.D. program, while a dissertation is typically required for a master’s degree (Engo Academy, 2023). Dissertations are usually longer than theses and must encompass background and research information. Conversely, a thesis is presented at the end of a master’s program, whereas a dissertation is submitted to obtain a Ph.D. (Engo Academy, 2023)

- **Theoretical Framework:**

#### **4.1 Davis, (1989) Technology Acceptance Model:**

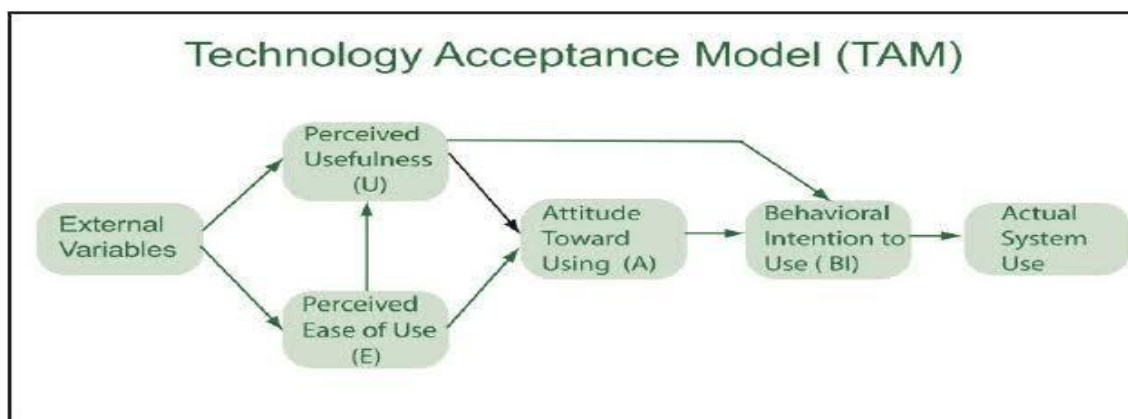
The Technology Acceptance Model (TAM) is an information system theory proposed by Fred Davis in 1989. It explains the factors that influence people to adopt or reject technology. The model is an interdisciplinary field combining both psychology and information systems. TAM emphasizes the idea that our attitudes towards technology are shaped by two factors which are perceived usefulness and perceived ease of use.

Perceived usefulness refers to the extent to which we believe that using a technology will be advantageous, practical, and effective in achieving a specific goal. In the other hand, perceived ease of use relates to the belief that the technology will be straightforward and easy to learn and operate. Together, these models suggest that for a technology to be adopted, it must be seen as both beneficial and user-friendly.

Therefore, the two factors “perceived usefulness” and “perceived ease of use” can be employed to the student’s views about developing self-correction strategies through ICTs in several ways:

First, perceived usefulness (PU) is about how much students hold the believe or have trust on the efficacy, power of ICTs tools to correct their writing when working on their master’s Dissertations. On the other hand, perceived ease of use (PEU) will help us to understand the simplicity that students believe in when using ICTs to self-correction.

Finally, through using those two important tools we may perceive if learners beneficiate or gave a positive impact and identify the issues that learners may face when using ICTs tools.



**Figure 1: Original Technology Acceptance Model (TAM)** by Md.KhaledAmin (2013)

To conclude, this model is influential and significant in the field of education and EFL learning and by figuring out what makes technology successfully taking the role of guide helping learners to choose the right tools to enhance the learning experience and make it more enjoyable leading to improved learning outcomes.

## Conclusion

The literature review chapter provided a comprehensive understanding for the significance of ICTs in the field of education particularly EFL learning. The chapter also provided an overview of the existing research on developing self-correction strategies while writing using ICTs. The chapter reviewed various studies on our field of study highlighting their key findings. Finally, the chapter is concluded with a detailed explanation of the theoretical framework adopted in this dissertation Technology Acceptance Model by Davis.

# **Chapter II: Research Design**

## **Introduction**

This chapter includes the research design and methodology used in the study. It provides a road map to the process of data collection and data analysis. The chapter is divided into three main sections. The first section is concerned with the research method and design adopted for this study. The second section details the data collection procedure highlighting the context and the sample in which the study took place in addition to the instruments used, the questionnaire and the interview. The last section focuses on the data analysis procedures which explains how the data collected were analyzed. In short, the research design and methodology provide a comprehensive understanding for how the data were collected and analyzed.

### **1. Mixed method research:**

The current study uses a mixed-methods research approach. It involves combining and linking both quantitative and qualitative methods.

This strategy helps us discover and reveal hidden aspects related to developing students' views on self-correction strategies through ICTs. Additionally, the overall purpose and central premise of mixed-methods studies is that combining qualitative and quantitative approaches provides a better understanding of research problems and complex phenomena than either approach alone (Creswell and Clark, 2007). In this case, this research aims to analyze and investigate an unexplored area to gain a clearer understanding of how to correct mistakes using ICTs by employing tools such as questionnaires and interviews.

### **2. Data collection procedure:**

In this research, the investigator has the opportunity to better comprehend the topic being examined by using two common instruments, "a questionnaire and an interview." The two resources are helpful to reveal learner's perspective about developing self-correction strategies through ICTs in the process of writing master's Dissertations at MMUTO. Therefore, both questionnaire and interview are designed for master two students.

## **2.1 Context and Sample:**

The study took place in the Department of English at MMUTO during the academic year 2023/2024. As our research focuses on developing self-correction strategies using ICTs in the process of writing master's dissertations, only second-year master's students were involved in this study.

The sample includes second-year master's students from the five master's programs at our university: Foreign Languages Didactics, Language and Communication, General and Comparative Literature, Literature and Civilization, and Literature and Interdisciplinary Approaches. This selection ensures a comprehensive understanding of our topic from diverse perspectives.

## **2.2. Questionnaire**

For this research, we designed an online questionnaire using Google forms Software to gather information from our sample. According to McLeod (2023), a questionnaire is a research instrument consisting of a series of questions aimed at gathering information from respondents. It can be administered face-to-face, by telephone, computer, or post. The questionnaire is used to collect both quantitative and qualitative data in an objective manner.

The questionnaire designed for this research consists of 20 open-ended and closed-ended questions. The open-ended questions allow respondents to provide detailed answers, expressing their thoughts, feelings, and experiences without restrictions. On the other hand, the closed-ended questions offer respondents a set of predefined answers to choose from, which facilitates the collection of quantitative data.

The designed questionnaire is divided into three different sections. The first section contains general information about the participants: gender, master's specialization, and ICT proficiency. The second section explores the different types of ICT tools used for self-correction. It includes three multiple-choice questions (Q4, Q5, and Q6). The third section investigates the factors that influence participants to use or not use these tools. It consists of seven items, with participants given options to express their agreement or disagreement with the proposed factors (Q7 to Q11). Finally, the last section describes participants' experiences and the benefits of incorporating ICT tools for self-correction while writing, as well as the challenges they faced. It contains seven items: structured questions (Q14, Q15, and Q19) and semi-structured questions (Q16 and Q18). The questionnaire concludes by providing participants with the opportunity to add any additional information, comments, and suggestions relevant to our topic.

### **2.3 Interview:**

The researchers in this study rely on utilizing a semi-structured interview. It is a method of exchanging and communicating ideas between the interviewer and the interviewee by asking both predetermined and unplanned questions to uncover participants' perspectives, beliefs, experiences, and attitudes. In this case, the interview was distributed asynchronously via email.

### **3. Data Analysis Procedure**

The data collected were analyzed objectively to obtain reliable results and ensure the transparency of our study. As mentioned in the previous section, we collected two types of data: quantitative and qualitative. Two different analysis procedures were followed for each type: the descriptive statistical method for quantitative data and qualitative content analysis (QCA) for

qualitative data. Understanding the types of data collected is crucial for the success of the analysis.

### **3.1 Descriptive Statistical Method:**

Eteng (2022) defines quantitative data analysis as the process of examining, interpreting, and drawing meaningful conclusions from numerical data, which are usually collected from closed-ended questions. Additionally, it can be used for large sample sizes. Various methods are employed to summarize and describe the data, such as tables, charts, and graphs. The descriptive statistical method helps the researcher understand the data quickly and easily. It also simplifies the process of explaining the data to others.

### **3.2 Qualitative content analysis:**

Qualitative content analysis is one of today's most extensively employed analytical methods and has been found to be fruitful and useful in a wide variety of research applications within the educational landscape. QCA leads to an understanding of social reality or phenomena through the interpretation of verbal or written communication materials. It allows the researcher to process large quantities of data and is flexible in that the data can be verbal or visual, sampled from other sources, or collected by the researcher from natural settings. In this context, the aim is to identify key themes or categories within the content and provide a detailed description of the social reality represented by these themes as experienced in a specific context. By carefully preparing, coding, and interpreting the data, qualitative content analysis can help in developing new theories and models, as well as validating existing theories and providing in-depth descriptions of particular settings or phenomena.

Qualitative content analysis involves a process designed to condense raw data into categories or themes based on valid inferences and interpretations. This process uses inductive reasoning,

which allows themes and categories to emerge from the data through the researcher's careful examination and constant comparison. Creswell (2007) confirms that qualitative content analysis is a flexible method for analyzing qualitative data, employing either inductive, deductive, or a combination of both approaches. The coding system commonly used in qualitative content analysis can address both the manifest and latent content of communications.

### **Conclusion**

The Research Design and Methodology chapter outlines the process of data collection and analysis employed to achieve our research objectives. The framework adopted for this study was carefully selected to ensure reliable results. The next chapter focuses on presenting the findings and results, which involves the practical implementation of the framework.

# **Chapter III:**

# **Presentation of the**

# **findings**

## Introduction

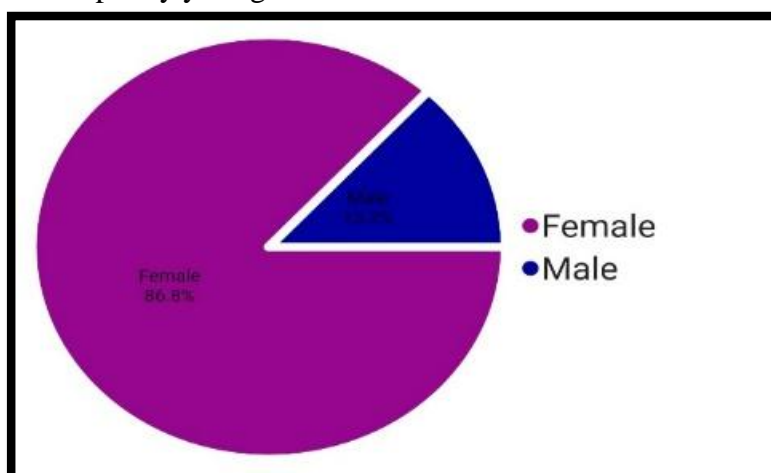
This chapter presents the results of our investigation into students' views on developing self-correction strategies through ICT tools in the process of writing master's dissertations at MMUTO. The investigation is divided into two main sections. The first section presents the findings from an online survey administered to second-year master's students at MMUTO. The second section outlines the results from asynchronous structured interviews. To ensure the reliability and clarity of the results, we have displayed the findings using diagrams automatically generated and summarized from Google Forms.

## Results of the students Questionnaire

The following presentation of the questionnaire results is based on a sample of 53 MA students from the Department of English at MMUTO. It explores the types of ICT tools used for self-correction by second-year master's students during the process of writing their dissertations. Additionally, the presentation examines the factors influencing students' acceptance or rejection of these tools, as well as the challenges they face when using ICT tools for self-correction.

### 1.1 Section one: Participants' General Background Information

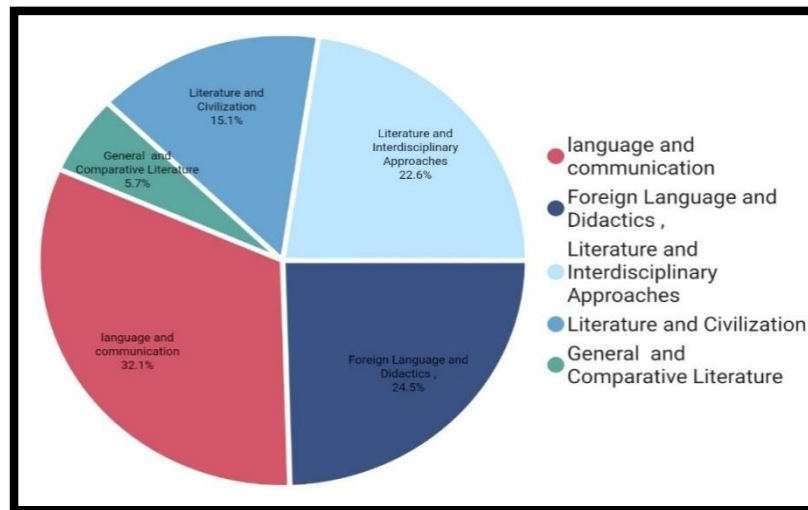
**Question one:** Specify your gender?



**Diagram 1: Students' Gender**

Diagram (1) illustrates the gender distribution of our participants. The majority representing (86.8%) which stands for 46 students are females and only (13.2%) which is the equivalent of 7 students are male.

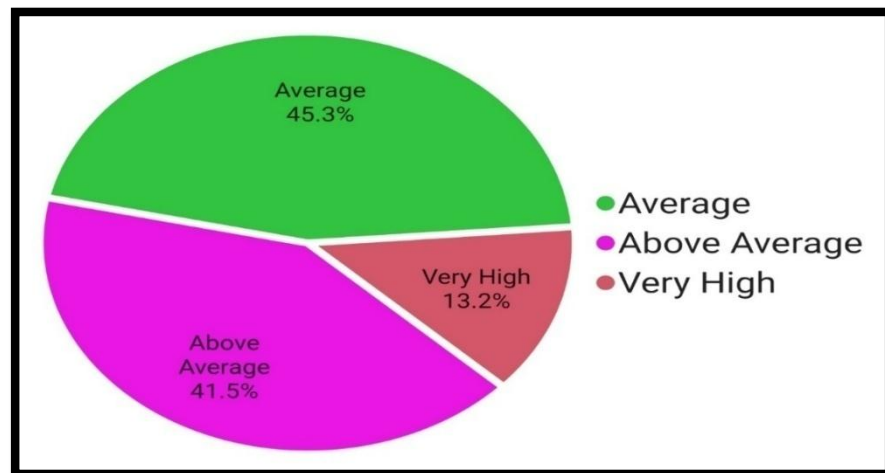
**Question two:** Which master program are you currently enrolled in?



**Diagram 1 Exploring Students 'Current Master's Program**

Diagram 2 depicts the master's programs of the participants. The chart shows that 17 students, representing (32.1%) of the participants, are enrolled in the Language and Communication program. Thirteen students, representing (24.5%), are in Foreign Languages and Didactics. Twelve students, representing (24.6%), are in Literature and Interdisciplinary Approaches. Eight students, representing (15.1%), are in Literature and Civilization. Finally, three students, representing (5.7%), are in General and Comparative Literature.

**Question three:** How would you rate your proficiency in using ICTs for academic purposes?



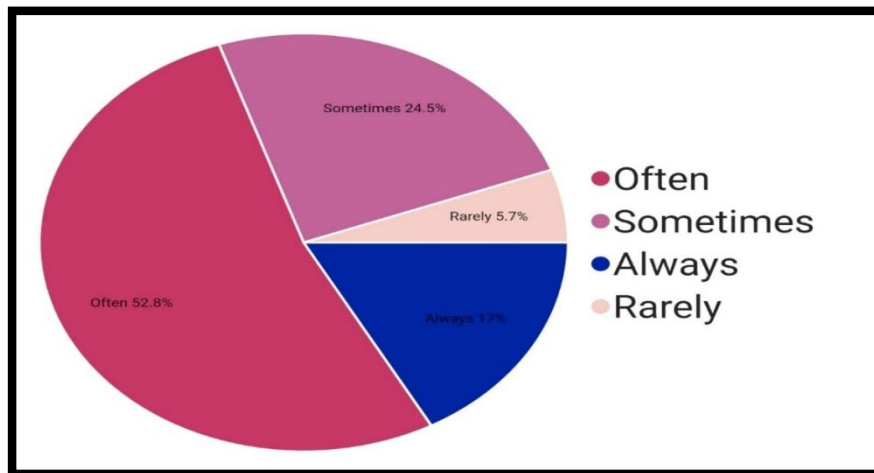
**Diagram 2** Students' Proficiency in Utilizing ICT Tools for Academic Purposes

As diagram 3 shows, the majority of participants (45.3%) rated their proficiency in using ICT tools for academic purposes as "average." Another significant portion (41.5%) rated their ICT proficiency as "above average." Finally, (13.2%) of the participants rated their proficiency as "very high." None of the participants considered their proficiency to be "below average" or "very low."

### 1.2. Section two: Students' ICT Usage for Self-Correction

The second section aims to assess students' frequency of using ICT tools for self-correction. It also explores the types of ICT correction tools they use in their academic writing.

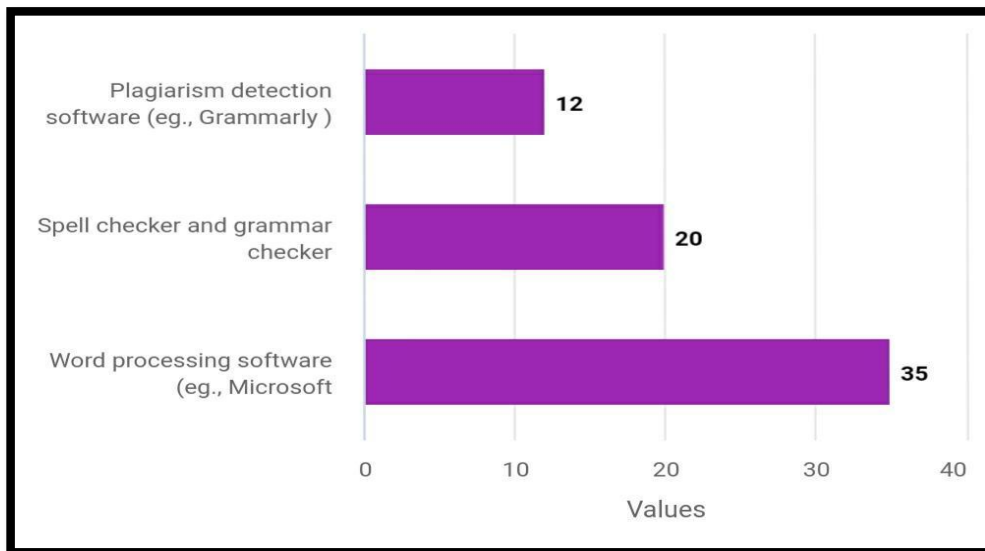
**Question four:** How often do you use ICTs tools to check and correct errors in your academic writing?



**Diagram 4: Students' Frequency of Using ICT Tools in Academic Writing**

The fourth diagram illustrates students' frequency of using ICT tools for self-correction in academic writing. The large majority of the students (52.8%), equivalent to 28 students, reported that they "often" rely on these tools. (24.5%), representing 13 students, claimed to "sometimes" use ICT tools for self-correction. (17%), equivalent to 9 students, reported that they "always" use ICT tools to check and correct their errors in academic writing. Finally, a minority of (5.7%), representing 3 students, responded that they "rarely" use ICT tools for self-correction in academic writing.

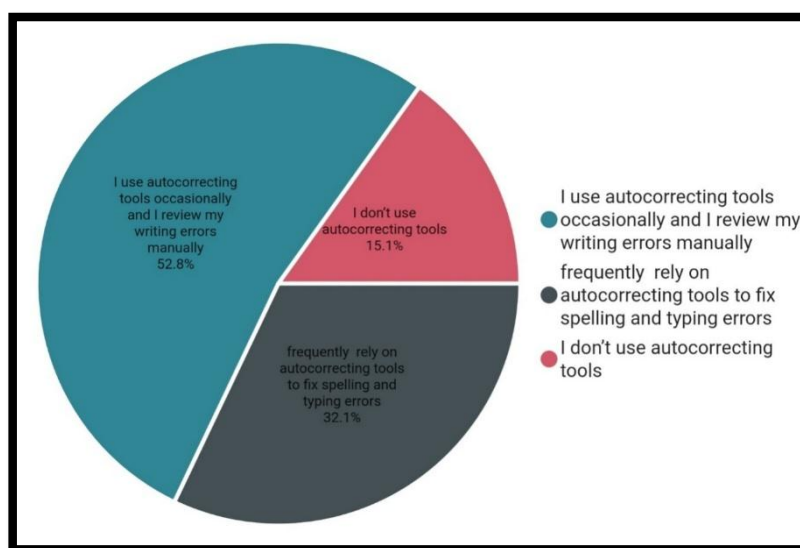
**Question five:** What types of ICTs tools do you use for error correction in your academic writing?



**Diagram 3** ICT Tools for Error Correction in Academic Writing

The majority of respondents (66%) reported that they use word processing software as an ICT tool for writing their dissertations, while (37.7%) use spell and grammar checkers. Finally, (22.6%) claimed to use plagiarism detection software, such as Grammarly, to assist them in the dissertation writing process.

**Question six:** How often do you use autocorrecting tools while writing your master dissertation?



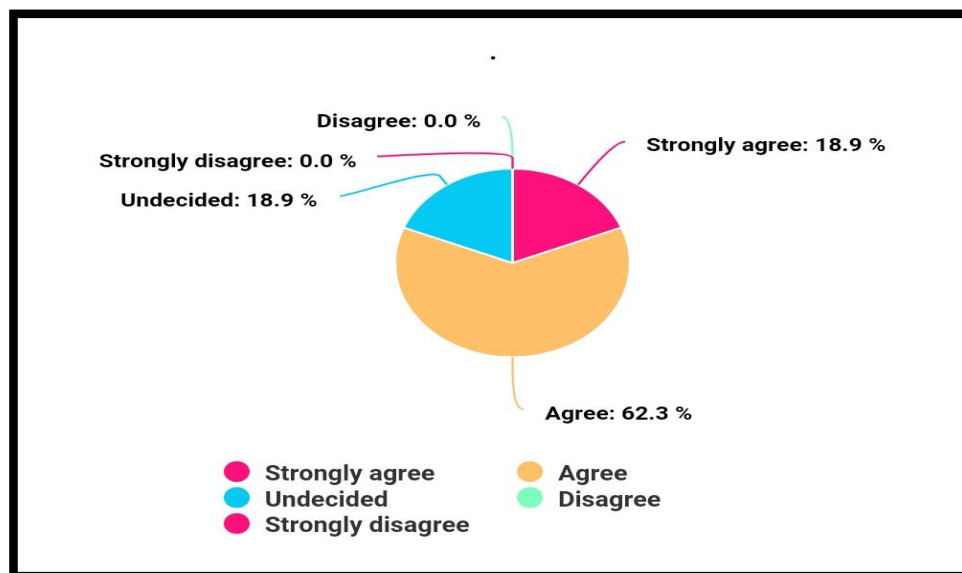
**Diagram 4** Autocorrecting use while writing a master dissertation

As Diagram 6 indicates, the majority of students (52.8%) use autocorrecting tools occasionally and review their writing errors manually. A considerable number of students (32.1%) claimed to frequently rely on autocorrecting tools to correct spelling and typing errors, while (15.1%) claimed not to use autocorrecting tools at all.

### 1.3 Section three: Factors influencing ICTs use for self-correction

The objective of this section is to determine the factors that influence the students to use or not to use ICTs for self-correction.

**Question seven:** Do you use ICTs because they make error correction easier and faster?

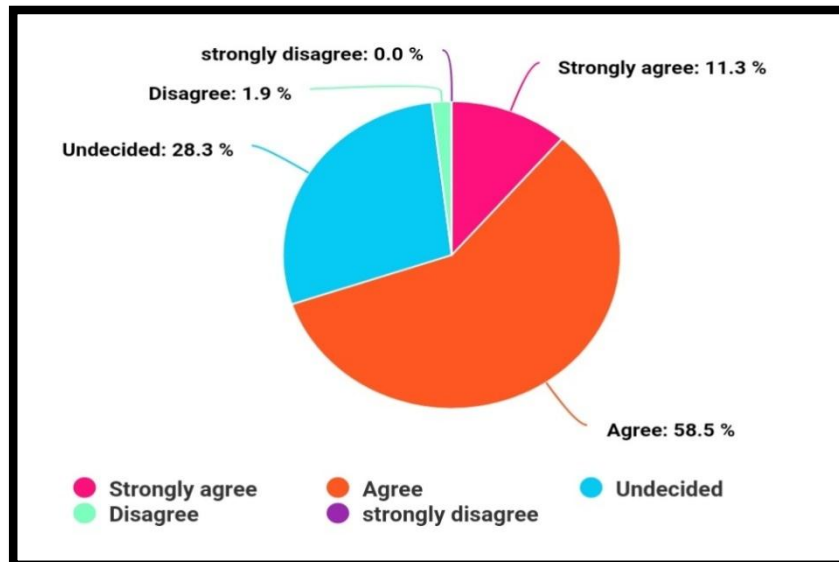


**Diagram 5 Students' Views on Using ICT Tools for Efficient Error Correction**

Diagram 7 indicates that the majority of students (62.3%) "agreed" that using ICT tools makes error correction easier and faster. Additionally, 18.9% "strongly agreed" with this statement. Meanwhile, 18.9% were undecided. Finally, no students "disagreed" or "strongly disagreed" with the statement.

**Question eight:** Does your familiarity with ICT tools influence your usage for error correction?

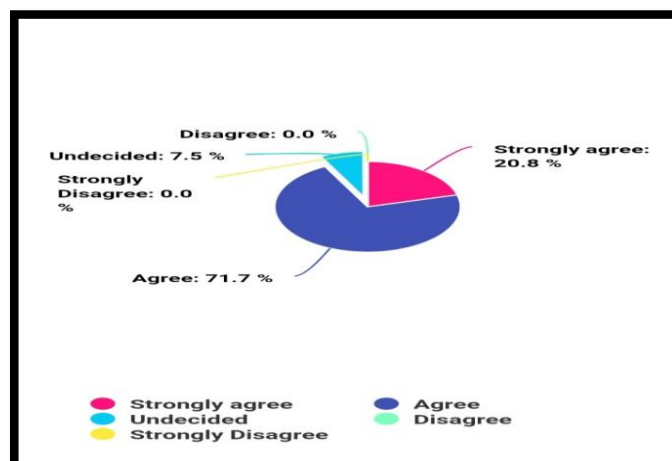
The majority of students (58.6%) “agreed” that their familiarity with ICT tools for self-



**Diagram 6** Students' Views on Their Familiarity with ICT Use for Self-Correction

correction influences their decision to use or not use them in their writing, while (11.3%) “strongly agreed” with this. The remaining (28.3%) were undecided, and only one student “disagreed.”

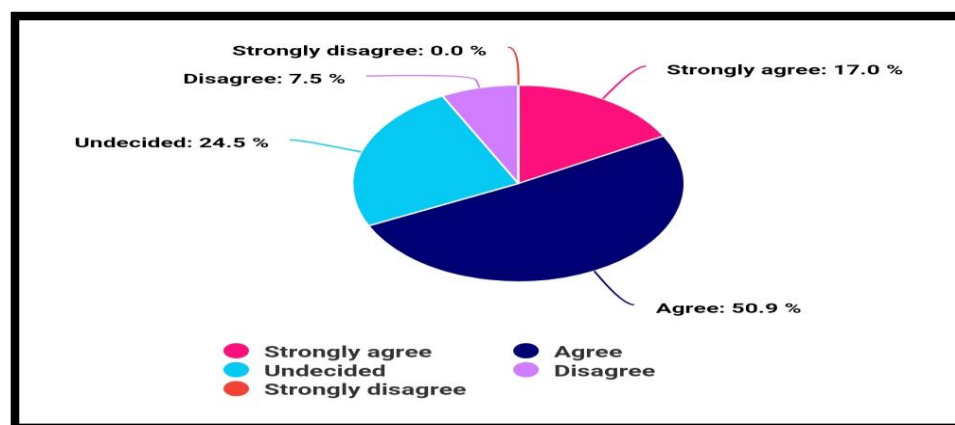
**Question nine:** Do you rely on ICT tools because they are effective at identifying and fixing mistakes?



**Diagram 7** Students' Perception of Effective ICT Error Correction

Diagram 9 illustrates students' opinions on the effectiveness of ICT tools for identifying and correcting mistakes. The majority (71.7%) “agree” that they rely on ICT tools because they find them effective for this purpose. Additionally, (20.8%) “strongly agree” with this view. A minority (7.5%) were undecided. No participants expressed disagreement or strong disagreement with this opinion.

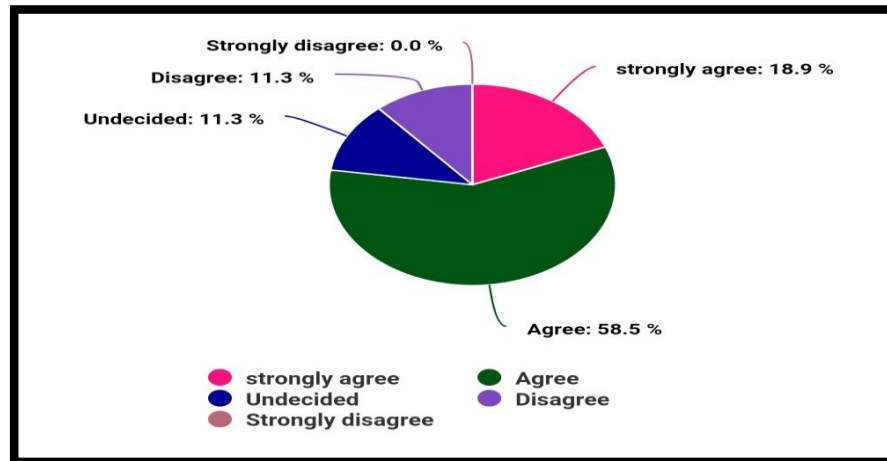
**Question ten:** Does your easy access to ICT resources affect your decision to use them for self-correction?



**Diagram 8 Students' Opinions on the Impact of Easy Access to ICT Tools on Error Correction**

As illustrated in the diagram above, the majority of students (50.9%) agreed that easy access to ICT resources influences their decision to use them. Meanwhile, (24.5%) took a neutral position on this view, and (17%) “strongly agreed” with the statement. Finally, (7.5%) expressed disagreement with the influence of easy access on their decision.

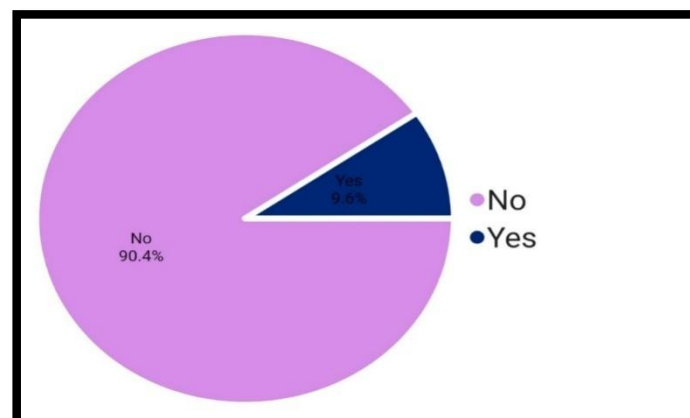
**Question eleven:** Do ICT tools promote your autonomy by allowing you to correct errors and boost your confidence without relying on constant teacher intervention?



**Diagram 9 Students' Views on Their Autonomy in Using ICT Tools for Error Correction**

The diagram above shows students' views on how ICT tools promote their autonomy and boost their confidence in correcting their own mistakes without relying on teachers' intervention. The results are as follows: a majority (58.5%) agree with this view, and (18.9%) "strongly agree" as well. A small fraction of participants (11.3%) "disagree" with this statement, while the remaining 11.3% hold a neutral position.

**Question twelve:** Are there any additional factors that impact your decision to utilize ICTs tools for self-correction?



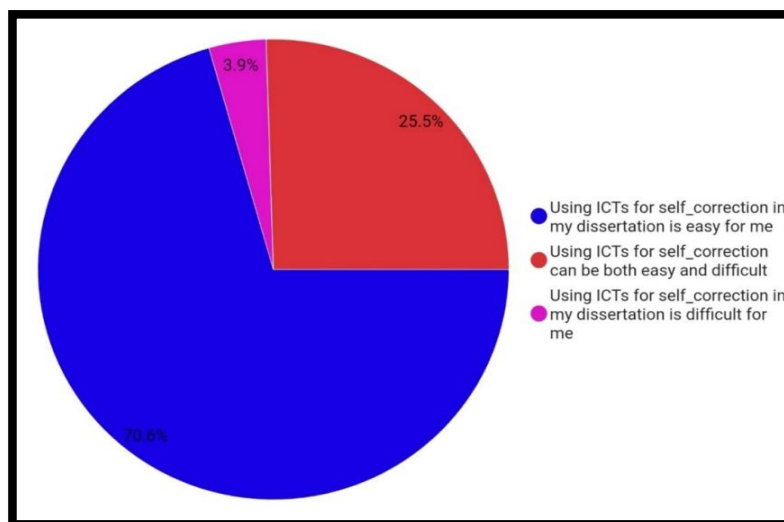
**Diagram 10 Factors Influencing the Use of ICT Tools for Self-Correction**

The diagram above illustrates the percentages of students influenced by various factors in their decision to use or not use ICT tools for error correction. The results show that a large majority of students (90.4%) are not influenced by any factor, while a small minority (9.6%) are influenced by such factors.

**If "yes," specify:**

In this section, only four participants provided justifications for their answers. Their reasons are as follows: One participant mentioned that factors influencing the use of ICT tools for self-correction include the belief that "it is not time-consuming." Another participant noted, "It is helpful; it facilitates the process of correcting errors." In contrast, one participant argued that students use ICT tools because they have lost creativity, confidence, and trust. Similarly, another student pointed out that "some individuals may prefer traditional methods like pen and paper for self-correction due to comfort, personal preference, or familiarity."

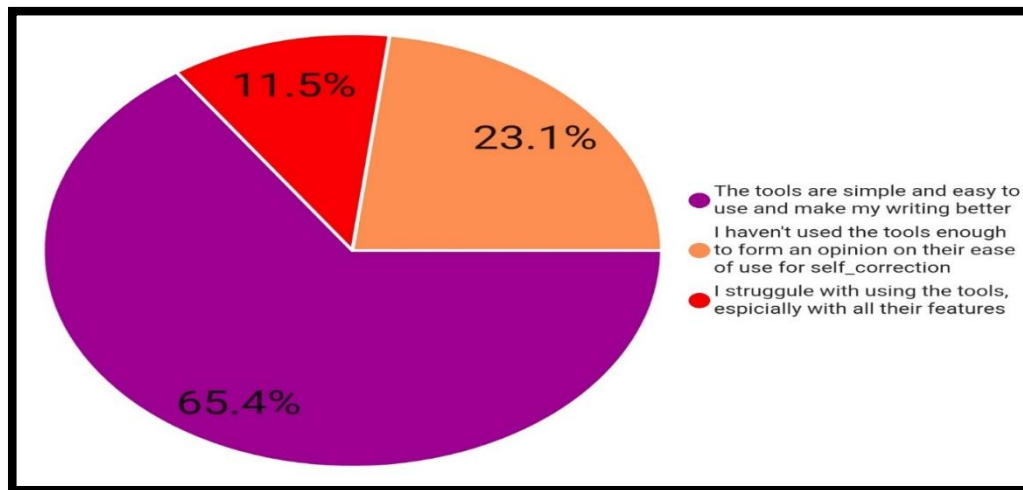
**Question Fourteen:** How easy do you find it to use ICTs for self-correction while writing your dissertation?



**Diagram 13** Students' Views on the Ease of Using ICT Tools for Self-Correction in Writing

The findings reveal that most of the participants (70.6%) found that using ICTs tools for self-correction in their dissertations is easy. In contrast, a small percentage of respondents (3.9%) found that ICTs tools are difficult to use. The other participants (25.5%) believe that ICTs tools are both easy and difficult to use.

**Question fifteen:**How do you perceive the ease of use of the ICTs tools available for self-correction in the dissertation writing process?



**Diagram 11** Perceived ease of ICTs Tools

As indicated in the diagram above, a large number of participants (65.4%) stated that they found ICTs tools Simple and easy to use, and that these tools improve their writing. In contrast, (11.5%) struggle with using the tools, particularly with their various features. Additionally, (23.1%) of the respondents claimed that they have not used the tools enough to form an opinion on their ease of use for self-correction.

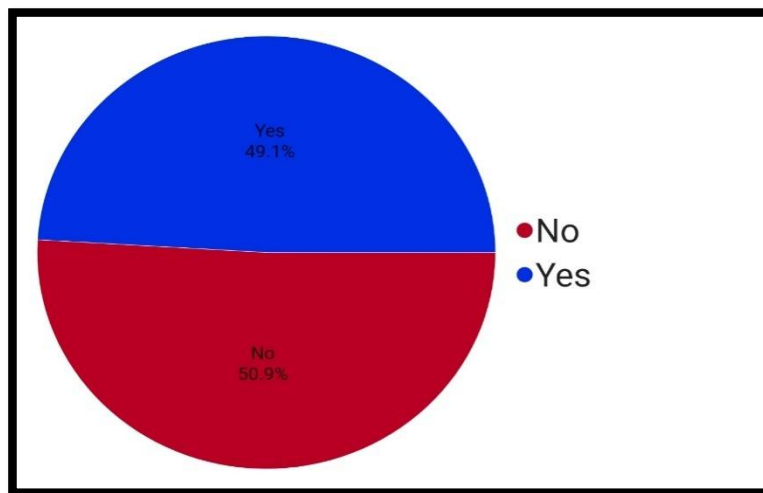
**Question sixteen:** What are the main benefits you perceive in using ICTs for self-correction compared to traditional method?

The Main Benefits	Students' Number	Percentage
<i>ICTs help correct mistakes faster, leaving more time for other tasks.</i>	<b>38</b>	<b>71.3%</b>
<i>Using ICTs reduces the number of mistakes in writing</i>	<b>28</b>	<b>53.8%</b>
<i>With ICTs, you can correct your work from anywhere with an internet connection, offering flexibility.</i>	<b>16</b>	<b>30.8%</b>
<i>ICTs provide instant feedback, helping you learn from your mistakes and improve your writing skills</i>	<b>22</b>	<b>42.3%</b>
<i>It helps to be confident about our work since we are sure that all the mistakes are corrected</i>	<b>1</b>	<b>1.9%</b>

**Table 1** Students' Views on the Benefits of Using ICT Tools for Self-Correction

The table shows the key benefits that students perceive in using ICT tools for self-correction compared to traditional methods. According to the findings, (73%) of respondents believe that ICT tools help correct mistakes faster, allowing more time for other tasks. Additionally, (53.8%) of students reported that using ICT tools reduces the number of mistakes in their writing. Furthermore, (42.3%) of participants noted that ICT tools offer flexibility by allowing corrections from anywhere with an internet connection. Finally, (1.9%) of learners indicated that using ICT tools boosts their confidence while writing, as they are assured that all mistakes are corrected.

**Question seventeen:** Have you experienced any difficulties when using ICTs to correct your mistakes?



**Diagram 12**Challenges Encountered in Using ICT Tools for Error Correction

The diagram above depicts students' experiences with using ICT tools to correct their mistakes. According to the finding, (50.9%) of respondents reported that they do not encounter difficulties when using ICT tools, while (49.1%) reported experiencing difficulties with self-correction using these tools.

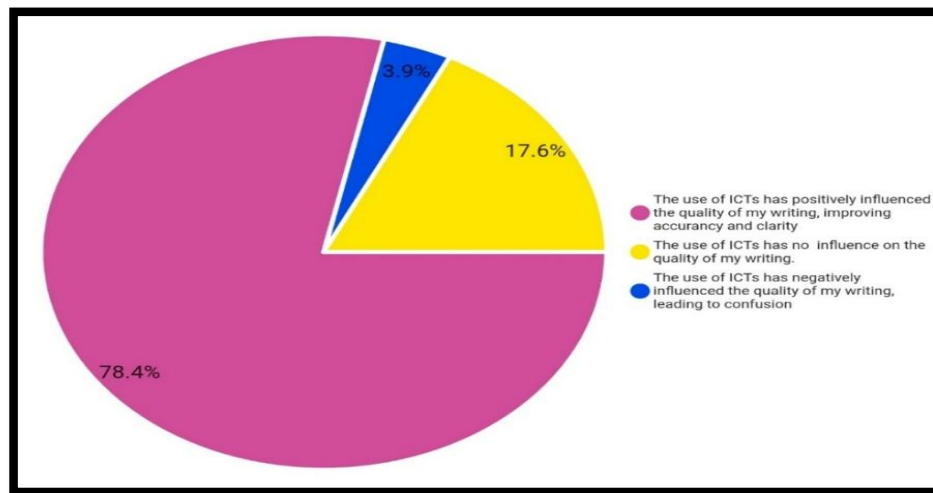
*if yes, so what are these challenges?* (feel free to choose all the options based on your experiences, or add other challenges you have faced)

<b>challenges faced while using ICTs tools for self-correction</b>	<b>Students' Number</b>	<b>Percentage</b>
ICT difficult tools may not work correctly or may be to use due to technical problems	<b>15</b>	<b>50%</b>
Insufficient training or guidance on how to use ICT tools for self-correction can make them difficult for effective use	<b>6</b>	<b>20%</b>
Some apps or tools for self-correction may not be free, requiring learners to pay for access	<b>14</b>	<b>46.7%</b>
Certain types of errors may not be accurately detected or identified by ICT tools	<b>11</b>	<b>36.7%</b>

**Table 2 Challenges Faced While Using ICT Tools for Self-Correction**

As indicated in this diagram, (50%) of participants reported that ICT tools sometimes may not work correctly or may be difficult to use due to technical problems. Additionally, (20%) of students noted that insufficient training or guidance on how to use ICT tools for self-correction makes them challenging to utilize effectively. Furthermore, (46.7%) of respondents highlighted that some applications, devices, or tools for self-correction may not be free, requiring learners to pay for access. Some students also mentioned that certain types of errors may not be accurately detected or identified by ICT tools.

**Question nineteen:** How did ICTs tools use influence the overall outcome and quality of your dissertation?



**Diagram 13 The Influence of ICT Tools on the Overall Outcome of master Dissertations writing**

This diagram illustrates how ICT tools have influenced the overall outcome and quality of dissertations. The majority of students (78.4%) reported that the use of ICT tools has positively impacted their writing by improving accuracy and clarity. In contrast, (17.6%) of students indicated that ICT tools have no effect on the quality of their writing. Only about (4%) of respondents felt that ICT tools have negatively influenced their writing, leading to confusion.

**Question twenty:** Do you have any additional comments you believe are relevant to this topic?

In this part, students shared their opinions on the use of ICT tools in writing dissertations. Some students highlighted that self-correction is important because it boosts their confidence and helps them check grammar mistakes and sentence structure. Others noted that ICT tools have positively impacted their writing by enhancing its quality. However, one student raised a concern that sometimes ICT tools are not used ethically, suggesting that certain universities should consider their use as unethical in academic contexts.

- **Presentation of the Results from the INTERVIEW**

This section presents the results of the structured interviews conducted asynchronously via email with six second-year master's students. It aims to provide an in-depth exploration of students' experiences and views regarding the use of ICT tools for self-correction in their master's dissertation writing.

***Question one: How do you assess the performance of ICTs tools you have employed for self-correction in your master dissertation writing?***

When we asked our 6 participants to describe their experience on using ICTs tools for self-correction while writing their master dissertation, they described their experiences as bellow, four students' responses fall in the effectiveness and usefulness of ICTs tools; two students found the tools important for improving clarity and grammar. They highlighted their effectiveness and usefulness in detecting grammar and spelling mistakes but time-consuming. A student simply stated that ICT tools are very helpful in correcting mistakes. The usefulness and benefits of ICTs tools but did not use them for self-correction specifically.

A third student noted that while these tools are generally helpful, they can sometimes be confusing and provide incorrect suggestions, requiring the use of multiple tools for accuracy. One student expressed satisfaction with the overall performance of AI-based tools, particularly for identifying unnoticed grammatical errors and verifying text coherence.

***Question two: For instance, are there any particular features or functionalities that you appreciate for their simplicity and effectiveness in helping you to correct your errors?***

This question is about the features or functionalities they appreciate for simplicity and effectiveness in helping correct errors, the responses varied among the students, as exemplified below:

Student A, "I don't not think about any particular feature".

Student B “I really appreciate when these apps suggest me synonyms or more appropriate expressions for the things i am trying to say”.

Student C, “yes, as well all know, word office is probably the best and efficient tool to assess as during writing process. And i actually appreciate but it has a special function of detecting spelling mistakes that i do not usually notice”.

Student D, “grammar check tool, it highlighted any mistake, it makes it easier for me to fix them”.

Student E, “I cannot think of any particular functionality that helped me. Probably time saving”.

Student F, “well, if there is any feature i appreciate the most it is for sure the user \_friendliness of the tools i use. They are as easy to access and to use. This feature, in fact, urges me to want to use these tools to correct my productions. I can also assume that they are accurate most of time, so this is another feature I like”.

**Question Three: *Do you face comprehension challenges in how to use certain features or have you experienced any confusion following the ICT tools’ instructions? If yes, so could you please explain?***

The goal in asking this question is to assess the clarity and simplicity of instructions provided by the ICTs tools used for self-correction.

The majority of students claimed that they did not find big issues in using ICTs tools for self-correction. In general, they highlighted the ease use of these tools and the clarity of their instructions. Only one student highlighted the fact that some tools need a premium version.

**Question four: *Do you find certain tools easier to use than others? And what tools do you not find easy to use?***

Among the students’ answers, there were varied opinions on the ease of use of different tools. Student A claimed that all the tools she uses are easy to use and they seem to be designed

identically. Student B mentioned that she thinks that QuillBot is easy to use. While Roverso is more complicated. Student C said that grammar checker is the easiest one to use. She added that it is all about finding the right tool that suits your needs and preferences. Student D reported perplexity (AI) is easy to use, but she did not find any other tool particularly difficult to use. Students E and F agreed that Microsoft Word processor is the easiest tool to use.

**Question five: Do you prefer using technology to minimize errors and save time or you prefer to wait for your teacher or supervisor feedback?**

The aim of this question was to explore students' preferences regarding the use of ICT tools. Specifically, students were asked whether they preferred using technology to minimize errors and save time or waiting for feedback from teachers or supervisors. The responses varied among the students.

Student A reported: "It depends. Sometimes even teachers may make errors, so it is up to students to decide which tools to use in different situations."

Student B said: "I believe it is better to rely on teachers' guidance and feedback rather than on technology, because they have the authority, expertise, and knowledge to guide us toward what is expected at the institution. Even if time is a concern, you can still make progress at different stages of your work, knowing you are on the right path—something that technological aids may not always guarantee in some cases."

Students C claimed: "Teachers know better because they are human, not robots or AI, which makes them more trustworthy. While technology helps to avoid some obvious mistakes, teachers provide critical thinking and judgment that are essential to the process."

Student D reported: "In my experience, I believe that relying on technology to minimize errors and save time can be a better approach. While waiting for teacher feedback is valuable and important for learning, technology can offer immediate feedback and help catch errors in real-time".

Student E said: “It’s true that technological tools can be time-saving, but teachers’ feedback remains crucial, because they provide us with thoughtful comments regarding our performances and progress that the tools don’t.”

Student F asserted:” I favor a balanced approach. I mean that using technology for such a purpose is necessary and inevitable given the technology-driven world we live in; however, the feedback of a teacher is more valuable in my opinion, because, and after all, none is better at understanding a human more than a human. A teacher, in addition to the feedback, can eventually explain or give tips or pieces of advice to help me get rid of those errors, in contrast to ICT's which only correct mistakes. So, I may conclude saying I prefer to use this technology to self-correct my errors but ask for teacher's feedback.

**Question six: Do you believe that students reflect ethical dilemmas while using ICTs tools for self-correction in their academic writing?**

When we asked about any moral dilemmas related to using ICT tools for self-correction in academic writing, students expressed a range of views. One student claimed: “Students should be selective in using these tools to avoid impacting their academic integrity, especially with AI tools.” Another student stated: “Students need to pay special attention to ethical concerns like academic integrity, which may be compromised if they do not respect the rules governing academia.” A third student thought that over-reliance on these tools could present a moral dilemma by leading to a loss of personal responsibility. Other students did not perceive any moral dilemmas concerning the use of these tools, as they are seen primarily for self-correction.

**Question seven: In your opinion, how can MMUTO team support the utilization of ICTs for self-correction?**

When we asked how the Mouloud Mammeri University of Tizi-Ouzou team could facilitate the use of ICT tools for self-correction, students offered several suggestions. One student

asserted that she had no idea. Another suggested that curriculum development by expert teachers, taking into consideration students' needs, could be beneficial. A third student recommended providing free access to premium services of these applications and programs through the university's email system to ensure accessibility for all. Another student reported: "The MMUTO team can offer guidance and support in using these tools effectively by providing tutorials or workshops on self-correction techniques." Finally, one student proposed organizing informative conferences on this topic to facilitate the use of these tools for self-correction. Another student suggested incorporating practical lessons where students could use such technologies to correct their mistakes, particularly in an ICTs module, for example.

**Question eight:** Can you provide any advice regarding the use of ICTs for self-correction while writing a master dissertation?

When we asked for advice on using ICT tools for self-correction while writing a master's dissertation, students shared various perspectives. One student did not have specific advice, as she is still learning and exploring these tools. Another highlighted the benefits of ICT tools in detecting plagiarism and checking grammar and spelling mistakes but emphasized the importance of relying on one's critical thinking rather than solely on the tools. A third student advised using multiple applications for corrections rather than relying on just one. Another student said: "My advice is: always remember that you are the one using technology, so control your use to avoid becoming dependent." Lastly, one student recommended using ICT tools to improve the quality of the work but cautioned against blindly accepting their corrections without understanding the underlying reasons for the errors. This student also suggested seeking guidance from teachers and peers after using ICT tools for self-correction, and paying attention to grammar, spelling, and other aspects, particularly the organization and coherence of the work.

## **Conclusion**

This chapter presents a comprehensive overview of the results from two key data collection methods employed in this study. First, it details the findings from an online questionnaire completed by a sample of 53 students. This questionnaire aimed to collect quantitative data on various aspects of the students' experiences and perceptions. Additionally, the chapter discusses the results of asynchronous interviews conducted with six students from the Department of English at MMUTO. These interviews provided qualitative insights into the students' detailed perspectives and nuanced views. By combining these two methods, the chapter offers a rich, multifaceted understanding of the research topic, integrating both statistical data and personal narratives to present a well-rounded analysis of the study's objectives.

# **Chapter IV: Discussion of the findings**

## **Introduction**

The current chapter aims to review and evaluate the results obtained from the questionnaire distributed to fifty-four (54) Master 2 (M2) students and the interviews conducted with six (6) of them. This section considers the results in relation to the literature review and the Technology Acceptance Model discussed in the first chapter. There are three main points to address in this chapter. First, we discuss the types of ICT tools used by master's students at Mouloud Mammeri University to correct errors while writing their dissertations. Second, we examine the factors that influence students' decisions to adopt or reject the use of ICTs for self-correction in dissertation writing.

### **1 Discussion of the ICTs tools types adopted by the students to correct their errors**

From analyzing the findings, we observe an increasing reliance on ICT tools for self-correction among Master 2 students. A significant portion, approximately 70% of the participants, reported that they frequently or always use these tools to correct their writing errors. For self-correction, students rely on specific tools that are familiar to them.

#### **1.1 Word Processing Software:**

Such as (Microsoft word) which is the most common tool used among the students. The tool is useful for editing text and checking and correcting writing errors. "The word processor is a computer program used for editing text and checking and correcting writing errors. It is the most used type of all computer programs "(AbuSeileek 2006).

#### **1.2 Spell and Grammar Checker:**

**QuillBot** and **Reverso** are among the tools used by the students. According to Singh (2023): "QuillBot, is an advanced artificial intelligence (AI) writing tool, offers features such as sentence rephrasing, article rewriting and AI-generated content creation. QuillBot serves as a complete language processing and productivity tool with its grammar checking and writing

enhancement features”. Reverso is a grammar checker and rephrase, AI-powered writing tool to check grammar, spelling and style in English. Al\_Ahdal. (2020) defined this tool as « an ease to use error analysis tool. It encourages one to accomplish a decent degree of composing capability by redressing even the most awkward errors quickly and efficiently. It gives various applicable revisions and users are recommended to choose one of them as indicated by the setting of composition ». It also provides the possibility to translate texts. The students perceive the usefulness on these tools in detecting errors also their user-friendly which improve their writing composition. “spell check and grammar check can help the students in the right direction in their composition “(Ghaeni and Bayati 2006) see chapter one

### **1.3 Plagiarism detection software:**

A large number of master two students tends to use plagiarism detection software like Grammarly to correct their errors since its beneficial to ensure originality and precision particularly in academic writing. Grammarly is widespread among users of English particularly over the past few years when online education has become very common due to COVID19 pandemic (Abu Guba el al 2024). Another research conducted by : DEWI ( 2022 ) found that using Grammarly as an application for automated writing evaluation ( AWE ) is effective and students have positive perceptions on its use in EFL writing classroom as they found many advantages , such as : helping them to check grammar errors , punctuation , spelling and word choice , minimize writing mistakes , improving vocabulary and writing abilities . In addition to its ease access anytime and everywhere.

### **1.4 Autocorrecting tools**

A copious number of students prefer or rely on autocorrecting tools as they encompass the capacity to determine, correct spelling mistakes and also reduces the need of

teachers' intervention. "Automatic spelling correction (ASC) systems help to find the intended form of word. They identify problematic words and propose a set of replacement candidates" (Haladek et al 2020)

### **1.5 AI Tools (Perplexity)**

Perplexity is one of the new generation of AI is adopted by the students for self-correction ( it is important to note that all the types of tools used for self-correction are classified as types of artificial intelligence as they rely on machine learning techniques to identify errors then provide correction or improvement based on stored data ) . Artificial Intelligence AI can deal with new problems when the general principles and techniques for working with computer applications for language learning have been learnt for example to correct a sentence the computer should have the correct and incorrect forms, then it provides the feedback (Livingstone 2012). However, the new generation of AI has revolutionized the concept of Artificial Intelligence by providing new opportunities such as the ability to correct new types of errors in addition to their ease of use. AI tools continue to develop now they offer more than grammar and spelling suggestions but also enable writers to make their content more engaging. (Jacob 2023) To conclude, master two students rely on different types of tools for self-correction in their master dissertation writing. Most students perceive the ease use and the usefulness on these tools.

## **2 Discussion of the factors that influence students to use or not to use ICTs tools for self-correction in dissertation writing**

The second research question aims to explore the factors that affect students' acceptance or rejection of using ICTs tools for self-correction while writing their master dissertations. Following the theoretical framework adopted for this study which is "Technology Acceptance Model (TAM)" proposed by Davis (1989). The theory explains how come to accept the use of

new technologies relying on two main factors which are: Perceived ease of use this factor refers to the belief that technology is easy to use without making much efforts. Then, perceived usefulness refers to the belief that using technology improves performance and simplifies tasks. These two factors determine people views and attitudes towards the adaptation or rejection of technology which will be discussed in the following section in relation to our topic”.

## **2.1 Perceive Ease of use**

According to the Technology Acceptance Model, the easier ICTS tools are to use, the more interested students adopt or accept their use for self-correction. In relation to our finding students appreciate the user friendless of ICTs tools for self-correction. The majority of (70.6%) stated that incorporating ICTs for self-correction in their dissertations is easy and they did not found it difficult. In addition, approximately (65%) claimed that the tools are simple and easy to use making their writing better. Similar results were concluded by Rejeki (2023), who studied applying Grammarly application in academic writing highlighting that most students use Grammarly application and make good use of the exciting features. ICTs tools used for error correction are designed with simplified and automated functionalities, and they are accessible across various devices and platforms what make their use easy requiring less efforts “CEA seamlessly integrates into workflow with ease of use and teachers need no or negligible training in the use of it .The installation process also applies to ease of use « Al-Ahdal (2020) . This tool often provides its users with clear instructions on how to use them effectively which enhance their ease of use. These findings are consistent with Mariappan et al. (2022) who stated: “CBEA as employed in the form of Grammarly, Pigai, and word Smith tools was found to be user-friendly by researchers requiring less effort to operate the software “. There are 6 studies reviewed by Mariappan et al. (2022) highlight the ease use of CBEA for self-correction as one of its strengths.

## 2.2 Perceived usefulness

One of the major factors of technology acceptance model is perceived usefulness. This factor plays an important role in relation to the use of its tools for self-correction strategies since it promotes student's engagement and motivation. However, in relation to our results as it indicated in the interview most of respondents described their overall experience while using ICTs as being effective and useful especially for improving coherence, grammar and clarity for their written composition. On the other hand, students dealt with the questionnaire showed that ICTs influences their overall outcome and quality of their dissertations positively. Moreover, (62.3%) of participants agree that using ICTs tools make error correction easier and faster, as well (18.9%) of them strongly agree on this statement. Furthermore, a large number of the participants agree and strongly agree on the fact that they tend to use ICTS because they are effective at identifying and fixing mistakes as well as promote student's autonomy to correct errors without teacher's intervention. The main useful factors of ICTs tools used for self-correction that influence students to adopt them in their academic writing can be summarized as bellow

- **Efficiency and productivity** :38 students view that:” ICTs help correct mistakes, leaving more time for other tasks” this indicates that students perceive the usefulness of ICTs tools in enhancing efficiency of error correction providing more time for other learning tasks. Pearson (2024) highlighted: “they scan your text for error in the blink of an eye freeing your time for other essential tasks “. Clarckson (2023) stated that «instead of spending hours proofreading your work, online grammar checker can quickly identify errors and provide suggestion for correction.” Clarckson (2023)Finally, Benalilech and Kouache (2023) asserted that Grammarly quickly revise errors and it saves both teachers' and students' time.

1. **Improving quality and accuracy of written composition:** 28 students view that «using ICTs reduce the number of mistakes in writing process» one of the key factors in which these tools are useful and effective for identifying errors then providing correction which has a positive impact of the quality of the written composition particularly by addressing accuracy and reducing errors . According to Zacharias (2023) grammar checker tools help to reduce spelling mistakes, improve pronunciation, identify passive voice and offer alternative, reduce repetition, matching style, ton and voice ...etc.A study by Japos (2013) showed that the majority of grammatical errors were greatly reduced such as: spelling, commonly confused words, use of articles, pronouns agreement, adjectives and adverbs agreement...etc.
- **Flexibility:** 16 students appreciate the flexibility of ICTs tools provide. They enable them to correct their errors anytime and anywhere. This makes ICTs tools more practical and motivating to adopt them for self-correctionthis align with Al\_Ahdal (2020) view that CEA is computer based so it can be used anywhere and anytime.
- **Instant feedback:** 22 students appreciate that:” ICTs provide instant feedback improving the writing skills”. These expose learners for real-time learning and correction by immediately identifying the mistake then suggesting alternatives. Pearson (2024) admitted that most grammar checker today offer real time assistance. Just when typing words or sentences the tools scan for potential error or improve
- **Promote student’s confidence:** errors are one of the major barriers in language learning. Sometimes students may feel that they are uncomfortable on making errors and mistakes, this makes them loss their self-confidence which negatively impact their outcome. Using this tool can help them to overcome this barrier and enhancing their self-confidence regarding their works. Pearson (2024) claimed:” grammar checkers help

to improve language skills, this indirectly boosts users' confidence assuring that their punctuation, grammar, vocabulary is on point. It helps students to overcome the fear of making mistakes one of the major barriers of learners.

Using ICTs provide learners with many opportunities particularly in assessing their writing many others studies highlights the potential of using technological tools for self-correction. On a study by Tambunan et al (2022) in English department at Indonesian university find that corrective feedback is essential for improving linguistic accuracy, it highlighted that using traditional method is insufficient. For this, automated writing evaluation (AWE) tools like Grammarly can offer practical solution. (AWE) offer real time error detection and suggestion improves grammatical precision in writing, encourages self-correction and autonomous learning and provides comprehensive feedback on multiple writing aspects. Another study by Wu & Yu (2023) outlined the advantages of automated writing evaluation systems that they offer quick feedback, saving time for teachers and enabling students to learn independently. The tools also provide detailed analysis of writing additionally the deliver diverse feedback to address various learning needs. Assalhi et al. (2023) claims: "AWE is an effective tool for EFL learners to improve their writing skills; it can help them identify areas of improvement in their writing and provide guidance on correcting mistakes. Additionally, automated writing feedback can help EFL students become more aware of the conventions of written English, such as sentence structure and word choice. By providing students with personalized feedback on their writing, AWE can enhance their self-directed learning, improve their writing skills, and be confident communicators in English.

### **3 Discussion of some prominent interview questions addressed to students**

#### **3.1 Challenges affecting students' acceptance / adoption of ICTs tools for self-correction in their academic writing**

Even if the ease of use and usefulness of ICTs tools for self-correction, several challenges were identified by the students. These challenges impact (PEOU) and (PU), which can significantly change users' attitudes toward these tools from acceptance into rejection. These challenges will be discussed in follow taking into consideration students' views on how to overcome them and how to promote the acceptance of these tools.

- **Technical difficulties:** One of the major challenges students may face when using ICTs for self-correction is that these tools might not function correctly or could be difficult to use due to technical problems. This can negatively impact students' acceptance of the technology, according to the Technology Acceptance Model (TAM).
- **Lack of training and guidance:** The second major challenge affecting students' effectiveness in using ICT tools for error correction is that many students struggle to fully utilize the potential of these tools. As Roblyer (2003, as cited in Al-Ahdal, 2020) notes, "Teachers and students need basic mechanical information before applying computer technology to teaching and learning a foreign or second language. Therefore, only those familiar with computer technology can benefit from this approach." To address this issue, students have suggested solutions such as organizing informative conferences to facilitate the use of ICT tools for self-correction. Additionally, they recommend offering tutorials and workshops on self-correction skills.
- **Cost barriers:** The third obstacle is the cost barrier. Some platforms or tools are not free to use, which can create financial constraints for students. As Al-Ahdal (2020) notes, "Through various CEA software are online available with no cost; good CEA tools are paid services which may not be affordable to all teachers. Further CEA checker tools offering free unrestricted use are provided with limited access to functionality and may not be useful for point by point writing samples evaluation."

To overcome this challenge, students have suggested providing free access to premium services on these platforms by using university email accounts. This approach is intended to enhance students' effectiveness while writing.

- **Detection accuracy:** Certain ICTs tools cannot or have not the power to identify and fix specific mistakes such as errors related to the organization or the content. “At present, various computer aided error analysis software mainly deal with grammatical and punctuation errors, so their functions are still limited. A CEA tool should ideally be able to detect and correct all kinds of errors occurring during the learning process. It should not only be able to evaluate and correct the input data but should give appropriate results for users to improve their skill at writing. A good CEA ought to have the option to analyze a wide range of written errors with pronunciation, syntax, or use and then choose between a range of options intelligently” Al\_Ahdal (2020). Finally, to avoid this kind of challenges students may apply or use multiple apps or platforms to make sure that all the errors are corrected.
- **The quality of feedback provided:** Students highlighted that the feedback that ICTs tools provide for self-correction can lack context that teachers provide and technological materials do not guarantee this concept. According to the results of an study students believe that teachers provide them with thoughtful comments regarding their performance and progress that the tools do not , ICTs tools just correct the mistakes and this limitation is discussed in Wu and Yu ( 2023) : “AWE feedback is helpful for users to achieve their writing goals and improve the quality of their essays . However, its effectiveness differs in every aspect of writing, and it is not always more helpful than the teacher or peer feedback.”

- **The raise of ethical concerns about using of ICTs tools for self-correction in academic writing:** using ICTs for self-correction may lead to moral dilemma particularly when using the new generation of Artificial Intelligence tools like (perplexity, CHATGPT, Gemini and other tools). The misuse of these tools may impact academic integrity. M. Currie (2023) explored the use of CHATGPT and he stated: “Less than 2 months after launch, ChatGPT had over 100 million users. Universities and schools have reacted to rapid adoption of ChatGPT, in many cases applying blanket bans to its use; attempting to protect against misuse while forgoing potential education benefits. ». In addition, the over reliance on these tools received concerns on another negative effect which is the impact of creativity and critical thinking of students. « Technology, particularly artificial intelligence, is often opposed to learning and good research, the idea being that one no longer does the research but let’s an algorithm do it for them. » UNESCO (2024). In addition, Alharbi (2023) highlights that advancement in AI technology have transformed language learning and teaching. It offers extensive support beyond traditional grammar and spell checking. However, the use of these tools raises concerns about the authenticity of students work and their impact on learning.

Many other studies discussed limitations of incorporating ICTs for self-correction among this studies Wu & Yu (2023) highlighted several limitations for incorporating (AWE) to writing process. This study reveals that the feedback provided by (AWE) is not always beneficial as human feedback. It cannot replace the role of teacher in providing personalized guidance and support. For this student do not fully trust the feedback from (AWE). In addition to the technical issues as the performance of (AWE) can vary across different platforms and

devices. Moreover, the incorporation of (AWE) can be challenging particularly its training. Another research by YING XU (2018) reported that the effectiveness of (AWE) depends on the software or the platform; some tools are better at specific tasks than others. In addition, AWE feedback is less effective than human feedback in many areas, particularly in terms of cohesion, coherence, syntactic complexity and fluency. For this AWE, it should be used as a supplemental tool for self-correction rather than a replacement for human feedback, as the over-reliance on these tools can limit students' development.

### **Conclusion**

This chapter has discussed the results obtained from the online interviews and the questionnaire aimed to analyze students' views about developing self-correction strategies using ICTs tools in the process of master dissertation writing. The results reveal that students rely on different tools for self-correction, including Word Processing Software, Spell and Grammar Checker, Plagiarism detection software, Autocorrecting tools and finally AI tools. The results indicate that the majority of master two students who participated in this research have a positive view about using these tools to develop self-correction strategies. In addition, the factors that influenced students to adopt these tools were based on ease of use and usefulness of these tools, which provide different opportunities to the learners, such as efficiency and productivity, improving quality and accuracy of written composition, flexibility, instant feedback and promoting student's confidence. Concerning the factors that lead to the rejection of these tools, there were some challenges associated with them, like the lack of training, cost barriers, some technical problems, the quality of feedback and lastly ethical and moral concerns on using some types of artificial intelligence.

# **General Conclusion**

The present study has investigated students' views on developing self-correction strategies through ICT tools in the process of writing their master's dissertations at the University of Mouloud Mammeri of Tizi-Ouzou.

This study explores two main objectives. The first objective aims to identify the types of ICT tools that students use for self-correction in their academic writing. The second objective seeks to uncover the factors that influence students to adopt or reject the use of these tools for self-correction.

To achieve these objectives, we have relied on Davis' (1989) **Technology Acceptance Model (TAM)**, which explains the motivation of users to adopt or reject new technologies based on two key determinants: perceived usefulness and perceived ease of use, in addition to other external factors. In this research, TAM is used to analyze the factors influencing students to adopt or reject incorporating ICT tools for self-correction in academic writing.

To address our research objectives, we have opted for a mixed-methods approach that combines both quantitative and qualitative methods. The data collection procedure involved two instruments administered to master's students in the English Department at MMUTO. Firstly, an online questionnaire was distributed to 53 students. Secondly, an online asynchronous interview was conducted with 6 students to gain deeper insights into their experiences using ICTs for self-correction in their academic writing. For the analysis of the collected data, Descriptive Statistical Analysis was used to analyze the statistical data gathered from the closed-ended questions of the questionnaire. To interpret the qualitative data from the open-ended questions of the questionnaire, as well as from the interviews, we applied Qualitative Content Analysis (QCA).

The results of the study confirmed that a vast majority of students find correcting their master's dissertation errors using ICT tools to be both exciting and faster, as they tend to use

various tools such as word processing software (Microsoft Word), spell and grammar checkers, plagiarism detection software (Grammarly), autocorrecting tools, and AI tools (Perplexity).

Moreover, the findings reveal that the majority of students appreciate the ease of use of these tools and their usefulness in providing many opportunities, as they have positively influenced the overall quality and excellence of students' writing. These tools offer a good chance to improve learners' composition, accuracy, and clarity, and they promote their autonomy to correct errors and boost their confidence without relying on teachers' intervention. While the advantages of using ICT tools for self-correction are numerous, it is important to acknowledge that there are also several challenges associated with their use. These challenges include technical difficulties, lack of training and guidance, cost barriers, and detection accuracy. Additionally, using AI apps like ChatGPT and others for self-correction can raise ethical dilemmas, as it may affect students' creativity and academic integrity.

While our investigation highlights the significant benefits and challenges of using ICT tools for developing self-correction strategies in academic writing, it also suggests that further research is needed in this field. In particular, ethical considerations and the long-term impacts of AI-powered writing software should be explored, especially regarding whether reliance on AI tools for self-correction affects students' critical thinking and creativity in writing. We also recommend conducting an experimental study to compare the progress of students using AI tools with those using traditional methods for self-correction.

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# Appendices

## **Appendix1 Student questionnaire**

### **• Section one: Participants' General Background Information**

**Question one:** Specify your gender

- FEMALE
- MALE

**Question two:** Which master program are you currently pursuing?

- LANGUAGE AND COMMUNICATION
- FOREIGN LANGUAGE AND DIDACTICS
- LITERATURE AND INTERDISCIPLINARY APPROACHES
- LITERATURE AND CIVILIZATION
- GENERAL AND COMPARATIVE LITERATURE

**Question three:** How would you rate your proficiency in using ICTs for academic purposes?

- Average
- Above Average
- Very High

### **1. Section two: Students' ICTs usage for self-correction**

**Question four:** How often do you use ICTs tools to check and correct errors in your academic writing?

- Often
- Sometimes
- Always

- Rarely

**Question five:** what types of ICTs tools you use for error correction in your academic writing?

- WORD PROCESSING SOFTWARE (e.g. Microsoft)
  - Plagiarism Detection Software (e.g. GRAMMARLY)
  - Spell Checker and Grammar Checker
  - Other
- .....

**Question six:** how often do you use autocorrecting tools while writing your master dissertation?

- I use autocorrecting tools occasionally and I review my writing errors manually
- I frequently rely on autocorrecting tools to fix spelling and typing mistakes
- I don't use autocorrecting tools

### **Section three: Factors influencing ICTs usage for self-correction**

**Question seven:** “you use ICTs because the make error correction easier and faster.”

- Stronglyagree
- Agree
- Undecided
- Disagree
- Stronglydisagree

**Question eight:** “your familiarity with ICTs tools influences your usage for error correction.”

- Stronglyagree
- Agree
- Undecided
- Disagree
- Stronglydisagree

**Question nine:** “you rely on ICTs tools because they are effective at identifying and fixing mistakes”

- Stronglyagree
- Agree
- Undecided
- Disagree
- Stronglydisagree

**Question ten:** “your easy access to ICTs resources affects your decision on using them for self-correction.”

- Stronglyagree
- Agree
- Undecided
- Disagree

- Stronglydisagree

**Question eleven:** ICTs tools promote your autonomy, allowing you to correct errors, thus boosting your confidence without relying on constant teacher intervention

- Stronglyagree
- Agree
- Undecided
- Disagree
- Stronglydisagree

**Question twelve:** Are there any additional factors that impact your decision to utilize ICT tools for self-correction?

- Yes
- No

*If 'yes' sespecify ;*

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**Question Fourteen:** How easy do you find it to use ICTs for self-correction while writing your dissertation?

- Using ICTs for self-correction in my dissertation is easy for me
- Using ICTs for self-correction can be both easy and difficult
- Using ICTs in my dissertation is difficult for me

**Question fifteen:** how do you perceive the ease of use of the ICTs tools available for self-correction in your dissertation writing process?

- The tools are simple and easy to use and make my writing better
- I haven't used the tools enough to form an opinion on their ease of use for self-correction
- I struggle with using the tools, especially with all their features

**Question sixteen:** what are the main benefits you perceive in using ICTs for self-correction compared to traditional method?

- ICTs help correct mistakes faster, leaving more time for other tasks.
- Using ICTs reduces the number of mistakes in writing
- With ICTs, you can correct your work from anywhere with an internet connection, offering flexibility.
- ICTs provide instant feedback, helping you learn from your mistakes and improve your writing skills
- It helps to be confident about our work since we are sure that all the mistakes are corrected

**Question seventeen:** have you experienced any difficulties when using ICTs to correct your mistakes?

- Yes
- No

*if yes, what are these challenges* (feel free to choose all the options based on your experiences, or add other challenges you have faced)

- WICTs tools may not work correctly or may be difficult to use due to some technical problems

- Insufficient training or guidance on how to use ICTs tools for self-correction can make them difficult for effective use
- Some apps or tools for self-correction may not be free, requiring learners to pay for access
- Certain types of errors may not be accurately detected or identified by ICTs tools

**Question nineteen:** How ICTs tools use have influenced the overall outcome and quality of your dissertation?

- The use of ICTs has positively influenced the quality of my writing, improving accuracy and clarity
- The use of ICTs has no influence on the quality of my writing
- The use of ICTs has negatively influenced the quality of my writing

**Question twenty:** Feel free to provide any additional comments you believe are relevant to this topic

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## **Appendix 2 Student's interview**

*Question one:* How do you assess the performance of ICTs tools you have employed for self-

**Question two:** For instance, are there any particular features or functionalities that you appreciate for their simplicity and effectiveness in helping you to correct your errors?

**Question Three:** Do you face comprehension challenges in how to use certain features or have you experienced any confusion following the ICT tools' instructions? If yes, could you please explain?

**Question four:** Do you find certain tools easy to use than others? And what tools do you find not easy to use?

**Question five:** do you prefer using technology to minimize errors and save time or you prefer to wait for your teacher or supervisor feedback?

**Question six:** Do you believe that students reflect ethical dilemmas while using ICTs tools for self-correction in their academic writing?

**Question seven:** In your opinion, how can MMUTO team support the utilization of ICTs for self-correction?

**Question eight:** can you provide any advice regarding the use of ICTs for self-correction while writing a master dissertation