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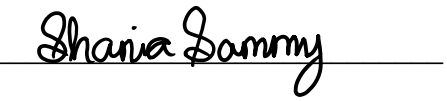
SIGNATURE - 

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ABSTRACT

This qualitative study investigates the influence of artificial intelligence (AI) on third-year Spanish and French second language (L2) learners at the University of the West Indies, assessing learners' awareness of AI integration, examining perceptions and attitudes towards AI agents, and exploring the impacts of AI on language learning. Previous studies have yet to fully delve into the impact of AI-supported instruction on Spanish and French language learners' accomplishments, therefore, examining how AI-assisted language learning tools affect L2 learners' achievements and perceptions of AI would significantly enrich current literature.

To gather insights, the methodology entails surveying L2 Spanish and French learners to understand their awareness, attitudes, and experiences with AI tools like ChatGPT and Duolingo, amongst others, at the University of the West Indies. This qualitative case study employs a review and synthesis approach to existing literature to identify recurrent themes and patterns relevant to the objectives of this study.

The results suggest a preference for traditional teaching methods despite the positive influence of AI tools on language skills, underscoring the enduring importance of human interaction in the learning process. Furthermore, participants express enthusiasm for increased AI integration but also voice concerns about potential over-reliance, emphasizing the necessity of a balanced approach to optimize learning experiences effectively. This research enhances understanding of learner preferences and emphasizes the critical role of human educators in navigating AI integration in language education.

Keywords: Artificial Intelligence (AI), Second Language (L2) Learning, Awareness, Attitudes, Motivation, Educational Technology, Learner Preferences, Integration of AI.

CONTENTS

LIST OF FIGURES

LIST OF APPENDICE

CHAPTER 1

INTRODUCTION

Artificial Intelligence, also known as AI, has permeated numerous sectors, from commerce to healthcare, and education. The world has embraced technological innovation, especially since the onset of the 2020 global COVID-19 pandemic that compelled people to rely on technology for education and work purposes. Collectively the post-pandemic world has maintained its high dependency on technology. AI or machine intelligence, represents a form of intelligence displayed by machines, differentiating it from the innate intelligence observed in humans and other living beings (Akgun and Greenhow 1, Fu et al. 1676). Its capabilities encompass a variety of functions, including, but not limited to, speech recognition, learning, planning, and problem-solving (Mageira et al. 4). AI is intentionally crafted to understand and address human inquiries, functioning as a platform that depends on human intelligence to provide relevant information (Ling 3). Various AI algorithms and tools prove favourable for the field of foreign language teaching and learning, for example ChatGPT, Duolingo, and Babbel (Ali et al. 42, Fu et al. 1676, Oluwafemi Ayotunde 216). Furthermore, statistics reveal that 85.88% of the world's population have in their possession a smartphone, that is, 6.92 billion persons, according to Statista (Turner). The capacity of AI to transform conventional teaching and learning approaches has drawn the interest of educators, researchers, and policymakers globally. By handling extensive data, interpreting intricate patterns, and offering personalized insights, AI presents innovative opportunities to enrich educational methodologies and improve student outcomes (Ling 4). As a result, educational apps that are powered by machine learning and governed by AI are widely accessible to everyone with a smartphone.

Nevertheless, it is important to know the meaning of a second language (L2) in this assessment to understand how AI machines aid in students' L2 learning. Understanding the meaning of a second language (L2) is crucial in this assessment because it forms the foundation for understanding the designed AI-powered tools that effectively support students in their L2 learning journey. By grasping the complexity of the language, educators, and developers tailor AI interventions to address specific linguistic challenges, personalize learning experiences, and provide targeted assistance where students need it the most. In numerous regions globally, individuals acquire multiple languages naturally within their families and communities, which they later use for various purposes, including education (Davis 4). The learning of one's first language (L1) usually occurs effortlessly during childhood, in a process often referred to as naturalistic, without deliberate language acquisition efforts. However, acquiring a second language (L2) can be a more diverse and complex journey, with learners facing challenges even after years of instruction (Davis 4). Second language acquisition (SLA) theory, proposed by Stephen Krashen, aims to identify the factors that influence the acquisition of a second language through a variety of concepts and factors. One example is Vygotsky's Sociocultural Theory that focuses on socialization and cultural development of mental abilities, through having a cognitive-advanced individual interact with a less cognitive-advanced individual, for example, a teacher interacting with a child (Mcleod 588). Through this interaction, the child's cognitive ability develops. Therefore, in the second language learning classroom, children's ability to be bilingual increases due to their exposure. Vygotsky's Sociocultural Theory can be relevant to the use of AI in second language learning because if AI tools are developed to incorporate interaction, cultural context, and scaffolding in the learning process; they will provide valuable support and enhance the language learning experience for students through learning in this environment (Fu et al. 1677).

AI chatbots function as ‘quick-witted’ educators, delivering educational content, fostering interactive discussions, and offering constructive feedback to students, among other roles (Mageira et al. 3). Harnessing its capacity to process extensive data, analyze intricate patterns, and provide personalized insights, AI introduces innovative approaches for reshaping educational practices and elevating student outcomes. In alignment with this trend, some educators have incorporated AI-assisted language learning tools into education to assist learners in advancing their language skills. As an AI-assisted language learning tool, ChatGPT, which is designed to generate human-like text responses given a prompt making it well-suited for conversational applications, holds the potential to enhance language learners' skills and subskills (Ali et al. 43). It furnishes learners with writing ideas, proposes alternative sentences to enhance their writing proficiency, and contributes to their language learning accomplishments. AI-supported language learning tools are known for establishing immersive and captivating learning environments, enabling learners to conveniently undertake language learning tasks and elevate their overall language proficiency (Ali et al. 43, Ling 4). Moreover, AI chatbots can provide comprehensive support to students by addressing their inquiries and assisting them continuously, which effectively alleviates learners' apprehension of speaking or using the second language, as the AI operates in a multifaceted manner (Mageira et al. 3).

1.1 Rationale

Technological/Digital globalization, the process whereby people from around the world connect through using technological/electronic devices, has made it easier for people of different languages to communicate. Second language learning is therefore deemed a necessity for humans to communicate and interact with others around them. Hence, it is important to study the

development of AI usage at the University of the West Indies amongst second language learners, to understand their awareness, perceptions, and how it affects their motivation to learn. This study is relevant for Caribbean society since it will reflect the technological advancements and individuals' mindsets about AI in L2 learning.

1.2 Research Questions

1. To what extent are Year 3 Spanish and French L2 learners aware of the presence and use of AI in their language learning process at the University of the West Indies?
2. What are the perceptions and attitudes of these L2 learners towards AI agents in second language learning contexts?
3. How does user awareness of AI agents and their capabilities impact the motivation and engagement of L2 learners in language learning activities?

1.3 Objectives

1. To assess the level of awareness among third year L2 learners regarding the integration and utilization of AI in their language learning process at the University of the West Indies.
2. To examine the perceptions and attitudes of third year L2 learners towards AI agents in second language learning contexts and to assess the influence of L2 learners' knowledge about AI agents and their functionality on their motivation and engagement levels in various language learning contexts.
3. To investigate the varied impacts of AI on second language learning within the University of the West Indies, focusing on the influence of AI agents and their functionalities on the motivation and engagement levels of L2 learners during language learning activities.

1.4 Significance of the Study

The study's significance lies in its contribution to understanding the dynamic relationship between AI and second language learning, specifically within the unique context of the University of the West Indies. Despite valuable previous studies that exist, they have not thoroughly explored the influence of AI-supported instruction on the language learning accomplishments of Spanish and French language learners. AI is developing fast and in recent years it has generated concerns in education. Hence, investigating the effects of AI-assisted language learning tools on the language learning achievements of L2 learners, and their perceptions of AI, will represent a substantial and worthwhile addition to the existing literature. The results aim to inform educational practices, offering insights that may influence future language learning strategies and the integration of AI technologies in the Caribbean setting.

1.5 Limitations

Potential limitations, such as sample size constraints and the inherent subjectivity of qualitative data, are acknowledged. Efforts will be made to mitigate these limitations and provide a transparent discussion of their potential impact on the study's outcomes.

1.6 Methodology

This study employs qualitative methodologies to gain a comprehensive understanding of the influence of artificial intelligence (AI) on second language learning. The research objectives are to explore the impact of AI in specific areas: AI Awareness, AI Attitudes, and AI on L2 Learner’s Motivation. The targeted participants for this investigation are third-year Spanish and French students.

The questionnaire, consisting of 19 questions, is strategically divided into four sections to assess different aspects related to AI in language learning. The instrument is administered through Google Forms for its accessibility and convenience, yet potential limitations related to the absence of face-to-face interaction are duly considered.

1.7 Population and Sample

The target population consists of third-year L2 learners of Spanish and French at the University of the West Indies, a total of twenty-eight (28) students. In this study, a convenience sampling approach was employed to readily accessible participants because of their ongoing participation in second language learning. Additionally, the cost-effectiveness of this method was considered, as it minimized the need for extensive recruitment efforts or incentives.

1.8 Data Collection

Drawing from existing qualitative sources, this study will utilize a review and synthesis approach. Relevant literature and scholarly articles discussing the attitudes and experiences of L2 learners towards AI in language learning will be used in the process of data comparison. The synthesized qualitative data will undergo thematic analysis to identify recurring patterns, themes, and insights related to the impact of AI on motivation and engagement in second language learning contexts at the University of the West Indies. This approach allows for a comprehensive exploration of existing knowledge and insights, contributing to a clearer understanding of the research questions.

1.9 Data Analysis

In the qualitative domain, the data analysis process will consist of blending insights from existing literature. Thematic analysis will be applied to spot recurrent themes and patterns within this literature. This approach aims to extract valuable qualitative insights from secondary sources, providing a deeper understanding of the attitudes and experiences of third year L2 learners towards AI in language learning at the University of the West Indies.

1.10 Chapter Outline

This study entails five (5) chapters. Chapter one (1), entitled *Introduction* gives a general background of the nature of study, rationale, research questions, objectives, significance of the study, limitations, and methodology. Chapter two (2), entitled *Literature Review* gives a historical perspective on technological advancements from humanity's early days from the "abacus" to modern day use of smart-phones, and the integration of artificial intelligence in the classroom. Chapter three (3), entitled *Presentation of Data* presents the findings, on figures and tables, from the study, with regards to students' awareness, perspectives, and motivational levels from using AI in their L2 process. Chapter four (4), entitled *Discussion of Findings* entails a comparative discussion of the results from the literature review and from the study undertaken at the U.W.I. Finally, Chapter five (5), entitled *Conclusion* summarizes the dissertation and highlights key points from the paper.

CHAPTER 2

LITERATURE REVIEW

Artificial Intelligence or machine intelligence, represents a form of intelligence displayed by machines, differentiating it from the innate intelligence observed in humans and other living beings (Akgun and Greenhow 1, Fu et al. 1676). Being in the digital age, or age of digital media, the escalating integration of artificial intelligence (AI) into language education necessitates a comprehensive exploration of its influence on L2 learners' attitudes, awareness, and motivation. Before exploring these influences, it is important to revisit history to understand how humanity revolutionized using technology and artificial intelligence in educational environments.

2.1 History of Technology

The historical roots of incorporating technology in education can be traced back to the earliest days of human civilization. The invention of the abacus in ancient Mesopotamia, around 2500 BCE, was used by the Sumerians and Babylonian people, and it can be considered one of the earliest forms of technology used in education (Fernandes). The term "abacus" is derived from the Latin language and has its roots in the Greek terms abax or abakon, signifying "table" or "tablet." The abacus represents just one among various counting instruments employed for tallying large numbers (Fernandes). This simple device revolutionized learning, allowing for the efficient calculation of numbers.

From the early days of chalkboards in 1801, to the integration of electronic devices in recent times, technology has played an instrumental role in education. Chalkboards, also known as blackboards, provided a convenient and reusable surface for teachers to present information and illustrate concepts (Muttappallymyalil et al. 589). Alongside chalkboards, map diagrams became

crucial in geography studies, allowing students to visualize and interpret geographical concepts more effectively (Muttappallymyalil et al. 590).

Technology presented itself in numerous ways in the education system. Notably, the introduction of paper in China during the 2nd century BCE marked a historical moment, offering educators a way to generate written work and distribute knowledge on a broader scale. The advent of paper, coupled with the evolution of writing systems, played an important role in recording and disseminating information. This breakthrough allowed for the preservation of knowledge, empowering subsequent generations to access and expand upon the wealth of information passed down through the ages (Cartwright). The mass production of printed materials revolutionized the accessibility of education, providing students with affordable resources to further their studies.

2.2 Evolution of Technology

As the 20th century dawned, the introduction of audio-visual resources further transformed education. The creation of the film projector in the late 19th century and the subsequent availability of educational films had a profound impact on teaching. Educators could now visually demonstrate complex concepts and engage students in a more immersive learning experience (Shabiralyani et al. 232). The rise of electronic devices like computers and the internet in the 20th century has transformed education in ways previously unimaginable (Rashid). Technological devices such as tablets and laptops have become omnipresent in modern classrooms, allowing students to access a wealth of information and educational resources in a matter of clicks. The internet has also enabled remote learning, making knowledge easily accessible to those who may not have physical access to traditional educational institutions. E-learning platforms, such as Moodle and Coursera, have gained widespread usage, and it is no surprise that the popularity of distance learning has increased

in recent years (Rawashdeh 110). However, it was the rise of computers and the internet in the late 20th century and early 21st century that truly revolutionized education. With the advent of electronic devices such as tablets, laptops, and desktop computers, students gained access to vast amounts of information and educational resources. The internet itself became a virtual classroom, opening a world of knowledge to those who previously had limited access to traditional educational institutions (Hanımoğlu 97).

2.3 Rise of Artificial Intelligence

In more recent years, the presence of AI in the education system is more prevalent than ever. AI is the simulation of human intelligence in machines which is programmed to think and learn like humans. AI was first used in technology in the mid-1950s, when computer scientists began developing programs that could simulate human intelligence (Anyoha). The term "artificial intelligence" (AI) was invented at the Dartmouth Conference in 1956, marking the formal beginning of AI as a field of study (McCarthy et al.). In the 1950s, the development of AI was exploratory, and researchers were optimistic about the potential for creating machines that could exhibit intelligent behaviour.

One of the earliest AI programs developed in the 1950s was the Logic Theorist, created by Allen Newell and Herbert A. Simon in 1955. The Logic Theorist was designed to mimic human problem-solving skills and could prove mathematical theorems. It is considered one of the first examples of a program that utilized AI techniques (Anyoha). While the 1950s saw the birth of AI as a concept, it is important to note that the field's early years were marked by theoretical exploration and limited practical implementations. Advances in AI technology and its widespread application in various domains occurred in the following decades (Gold).

Much later, in the early 2000s, AI was introduced into the classroom as a form of educational technology. Today, AI has become commonplace in classrooms worldwide. It presents numerous opportunities for the educational sector, such as automating grading systems, providing feedback on student work, and providing personalized learning paths. AI systems can analyze student data: their learning pace, strengths, and weaknesses, and personalize the learning experience for each student individually (Cardona et al. 12). It is a technology used to make learning and teaching easier than one could possibly anticipate.

AI is used in general education to provide smart learning recommendations, such as choosing the appropriate topics or learning materials for each student based on their abilities and interests. Additionally, AI-based chatbots, a computer program designed to simulate conversation with human users especially over the Internet, and digital assistants are used to answer student questions and provide personalized support to students. Various AI algorithms and tools prove favourable for the field of foreign language teaching and learning, for example ChatGPT, Duolingo, and Babbel (Fu et al. 1676, Oluwafemi Ayotunde 221). These programs are often powered by artificial intelligence (AI) and can be integrated into messaging platforms, websites, or applications. The primary purpose of chatbots is to provide information, answer questions, assist with tasks, or engage in conversation in a manner that resembles human interaction (IBM). AI in L2 learning can be used to identify language learners' pedagogical needs, such as improving writing or speaking skills. Also, AI-based writing assessment systems can analyze the structure, grammar, and style of writing, providing personalized feedback to students. Speech recognition technologies can be leveraged to enhance pronunciation and conversation skills among students, providing targeted remedial work, and increasing engagement within the classroom (Ling 3).

2.4 Artificial Intelligence in the L2 Classroom

Furthermore, it can be acknowledged that artificial intelligence has revolutionized the way language learning is approached in classrooms (Guerra). AI-powered systems have improved preparation and grading processes, freeing up educators to spend more time with their students. AI algorithms allow for personalized learning based on student needs, which enables better engagement and learning outcomes. Interactive and adaptive activities with AI technology show wide potential to increase student interaction and engagement in the classroom, creating more stimulating and effective learning environments (Guerra).

Despite the significant advantages of incorporating AI in education, students encounter various challenges that can ultimately result in limited or negative outcomes. For example, Arkorful and Abaidoo (2015) highlighted in their study that AI-driven learning, in certain cases, involves remote and contemplative experiences, leading to a lack of student interaction (Rawashdeh 114). When compared to traditional educational methods, AI-based learning may prove to be less effective due to the absence of face-to-face interactions with instructors or teachers. In AI-driven learning, assessments are typically conducted online, reducing the likelihood of preventing dishonest activities such as cheating and plagiarism (Rawashdeh 115). There are also potential ethical considerations when it comes to AI usage, which could cause barriers to adopt this technology in the classroom. According to Akgun and Greenhow, it is crucial to ensure that student privacy is not always sacrificed at the expense of personalized learning (4). The use of AI in the classroom could also lead to a reduction in human interaction at a time when many students are already struggling with a lack of engagement (Seo et al. 3). However, the indiscriminate collection and analysis of student data by AI systems may be perceived as a violation of privacy, as demonstrated by the Facebook–Cambridge Analytica data scandal (Seo et

al. 2). The actions of AI agents that neglect to consider the risks of data bias or algorithmic bias are seen by students as discriminatory (Seo et al 3). Instructors express concerns that an excessive reliance on AI systems may compromise students' ability to learn independently, solve problems creatively, and engage in critical thinking (Seo et al 4).

Navigating the multifaceted terrain of AI's influence on language education, this literature review will now delve into learner attitudes, technological integration, innovative approaches, and the enduring role of human educators.

2.5 Attitudes Toward AI in the L2 Classroom

In exploring attitudes and perceptions towards AI in language learning, Davis investigates the experiences and beliefs of both second language (L2) learners and teachers (50). The study reveals a prevalent belief (75.7%) that substituting human partners with current conversational AI tools would diminish the learning experience. Additionally, Mageira et al. scrutinize the usage of AsasaraBots, an educational AI chatbot, in L2 learning, uncovering a relatively low positive attitude toward utilizing this chatbot for language learning (13). These findings underline the importance of understanding learner preferences and attitudes, especially when integrating AI tools into language education. These studies also highlight the imperative of acknowledging and addressing learner preferences and attitudes to ensure effective integration of AI tools in language education, revealing prevalent concerns about the potential impact of substituting human interaction with current conversational AI and the relatively low positive attitude towards AsasaraBots in L2 learning.

2.6 Technological Integration

In addition to students' attitudes, fields of technological integration and academic achievement were analyzed. Oluwafemi Ayotunde et al. explore the use of Learning Management Systems (LMS), a software application or web-based technology utilized for organizing, executing, and evaluating a designated learning procedure, for foreign language learning, reporting increased learning satisfaction and academic achievement (220). This emphasizes the positive impact of AI-driven technologies on both student engagement and educational outcomes. Also, Zou et al.'s focus on supporting speaking practice through social network-based interaction in AI-assisted language learning highlights a strong belief in the potential of AI apps to enhance various speaking skills (8). These studies collectively suggest that integrating AI tools can positively influence language learning outcomes.

2.7 Innovative Approaches of AI in the L2 Classroom

Godwin-Jones introduces the concept of "structured unpredictability" through SMART technology as a potential pathway for L2 development (4). The concept of "structured unpredictability" implies that SMART technology can provide learners with varied and engaging language learning experiences. SMART technologies are intelligent, networked devices operating autonomously and synchronizing continuously. This novel approach showcases innovative strategies to leverage technology for language acquisition, as it may contribute to increased learner motivation as it introduces an element of surprise and novelty, making the learning process more engaging (Godwin-Jones 7) The suggestion that technology-driven language learning can enhance digital literacy and build metalinguistic awareness highlights the potential for learners to take a more autonomous role in their language learning.

Fischer et al. delve into the characteristics of instructions delivered by robots in foreign language teaching, emphasizing the significance of the robot's personality in influencing student performance. The study by Fischer et al. indicates that the success of robot instructors in language teaching is influenced by the speaking style learners employ (2). If the robot's speaking style is engaging, adaptive, and relatable, it can positively impact learner motivation. This suggests that the human-like qualities of robot instructors, including their personality and communication style, can contribute to a more motivating and effective learning experience. In summary, the mentioned studies imply that technology, when applied strategically, can enhance L2 learner motivation by providing engaging, varied, and personalized learning experiences, whether through structured unpredictability in SMART technology or the personality and speaking styles of robot instructors. These studies shed light on creative approaches to AI integration in language education, emphasizing the importance of tailoring technology to enhance the learning experience.

2.8 Role of Human Educators

In terms of AI and language skill development and the human element in L2 learning, researchers argue that though AI is quite beneficial, the need for human educators remains. While aids such as chatbots contribute to vocabulary development, grammar, and other language skills with corrective feedback, the crucial need for human educators is emphasized (Ro). BBC writer Christine Ro describes the interaction with the chatbot, Kainene vos Savant, as akin to engaging with "an all-knowing human friend." Ms. Joy Ehonwa, editor, and writer in Lagos who mainly utilizes Duolingo to learn French, underlines the limitations of language apps like Duolingo, noting that they often fall short in providing satisfactory explanations for errors. She articulates her preference for human interaction, stating that when faced with questions about language nuances,

she turns to Kainene for comprehensive explanations that go beyond the capabilities of automated language learning platforms (Ro). Also, Hanawald and Ling explain that while generative AI presents a valuable tool for educators in facilitating student learning, it is imperative to underscore its ingrained incapacity to serve as a complete substitute for human instructors (4). The intellectual capacity of teachers surpasses that of AI in fostering interpersonal connections, delivering real-time adaptability, and cultivating critical thinking, creativity, emotional intelligence, trust, and ethical considerations. Therefore, the distinctive attributes of human educators play an indispensable role in the comprehensive educational development of individuals, surpassing the capabilities of artificial intelligence.

2.9 Summary

In summary, the evolution of education from ancient tools like the abacus to modern artificial intelligence (AI) reflects a continual transformation of technology in the world. It has been demonstrated that the integration of AI into language education has significantly impacted the attitudes, awareness, and motivation of L2 learners. However, despite the positive influence of AI, challenges such as remote learning experiences, ethical considerations, and privacy concerns require careful attention. Also, while AI, including chatbots and generative technologies, proves beneficial in language skill development, the indispensable role of human educators in fostering learning experiences, cultivating personal connections, and nurturing critical skills remains paramount. Despite technological advancements, the unique qualities of human instructors, such as real-time adaptability, emotional intelligence, and ethical guidance, surpass the capabilities of artificial intelligence, emphasizing the enduring need for human educators in the holistic educational development of individuals.

In conclusion, a strategic integration of AI, considering learner preferences, fostering digital literacy, and recognizing the indispensable role of human educators, is crucial for effective language education in the era of AI.

CHAPTER 3

PRESENTATION OF DATA

A survey was conducted to gather insights into users' experiences with various language learning tools and AI applications. The survey aimed to understand user awareness, perceptions, and motivations, in language learning. Seventeen out of twenty-eight students responded to the online survey (60.71% respondents).

3.1 Awareness/Familiarity Levels of AI Tools

Further insights into each familiarity level reveal distinct patterns as chosen by the respondents in a close-ended question with three choices “Very Familiar”, “Somewhat Familiar”, “Not very Familiar” of AI tools. An open-ended question followed asking for further explanations about the tools they use.

Figure 1 presents familiarity levels towards AI Tools.

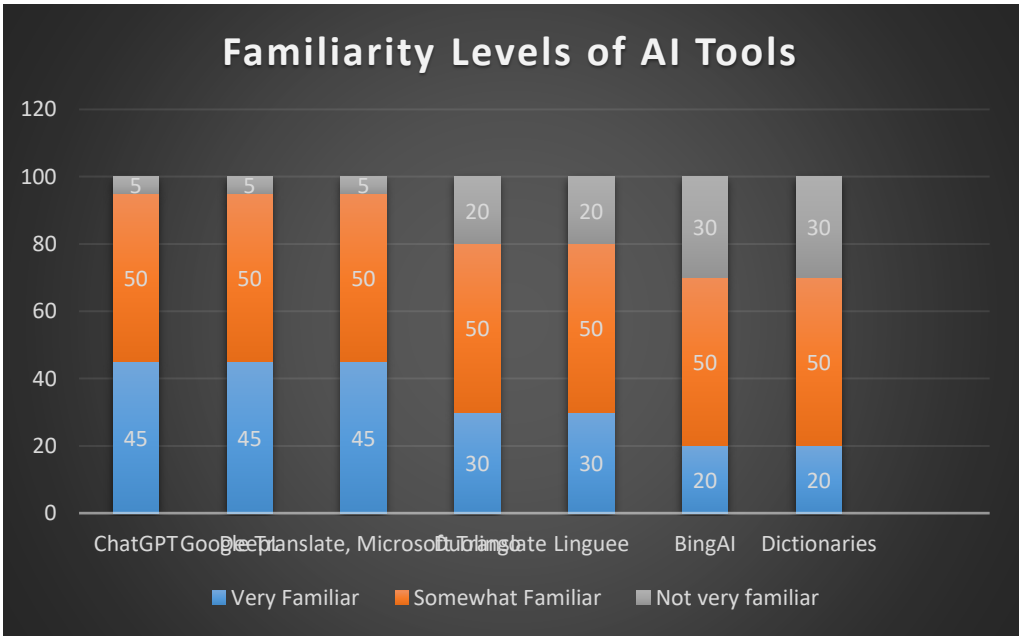

Fig. 1. Familiarity levels of AI tools.

Duolingo stands out as a tool for regular language practice to learn new vocabulary, and for the familiarization of idiomatic expressions as learners 1 and 2 indicated:

Learner 1: “Duolingo used during leisure time to learn vocabulary”.

Learner 2: “I have made use of Duolingo many times with the aim of familiarizing myself with idiomatic expressions from a myriad of Spanish speaking countries. Each time I've made use of this tool, my experience has always been productive and fruitful”.

Furthermore, DeepL is recognized for providing specific context related information, while ChatGPT is appreciated for well-written responses, particularly in essay-based studying as learners 3 and 4 implied:

Learner 3: “Translators like DeepL to understand context of specific statements. Sometimes you understand the words but not the complete meaning of the sentence”.

Learner 4: “ChatGPT: produces general knowledge based on essay questions, which used to study before exams”.

Lastly, users who indicated a low familiarity level with the AI tools prefer traditional learning methods such as relying on dictionaries, like Linguee, to aid in their language learning process.

3.2 Preferences and Attitudes Toward AI Tools

To understand user perceptions and attitudes towards the different AI tools, learners were asked to describe their experience with each tool they use. The surveyed individuals exhibited varied preferences in AI language learning tools.

Duolingo had a preference percentage of 45%, with learners mentioning some benefits of the language learning application, but also underscoring its shortcomings. Learner 7 remarked,

“Duolingo - it's good for revision and practice but I wouldn't recommend it for primary language learning”. Learner 8 also mentioned, “I used Duolingo in the past, during my time in secondary school, and it wasn’t very helpful at that point. I felt like I was already very knowledgeable on certain grammar structures and vocabulary so it would have been more useful if I was at entry level”. Duolingo is widely utilized for language practice because it provides engaging interactive features suitable for beginners and intermediate learners. Despite learners’ concerns about vocabulary applicability and gamification effectiveness, overall, Duolingo appears to be the most preferred and most used AI tool.

ChatGPT is chosen by 35% of participants for well-written responses and accuracy, especially for essay-based studying as mentioned by learners 9 and 10:

Learner 9: “Chatgpt- very well written work given to you and accurate”.

Learner 10: “ChatGPT - it was indeed helpful for obtaining vocabulary and helping with the formatting of sentences”.

Learners’ responses highlight the helpfulness of ChatGPT in obtaining vocabulary and assisting with sentence formatting, portraying a positive attitude toward its utility such as in their remarks that the AI tool is “accurate”, “helpful”, and provides “very well written work”.

The remaining 20% preferred other tools like DeepL, Linguee, Google Translate, and Microsoft Translate, primarily for translation purposes. Learners acknowledge the value of these tools in providing alternative translations for a richer vocabulary but express concerns about potential overreliance, emphasizing the need for these tools as supplements. Mixed opinions on long-term motivation and preferences for human educators also emerge, for example, learner 11 indicating, “Real life learning is the best because sometimes AI can be wrong and with teachers, they understand what you mean exactly when asking your questions. However, with AI u need to

phrase your questions correctly". DeepL and other tools are utilized for specific language-related tasks like learning grammatical rules, though concerns are raised about potential deterrence from traditional language courses, as learner 12 remarked, "Sometimes, in using translators such as DeepL, one comes across new expressions or grammatical structures. Upon researching them, skills in the language are improved. However, it is not as flexible, knowledgeable or engaging as human educators".

Overall, learners displayed a range of attitudes which vary depending on the personal experience using each tool.

Figure 2 below shows learners' preferences towards the different AI tools.

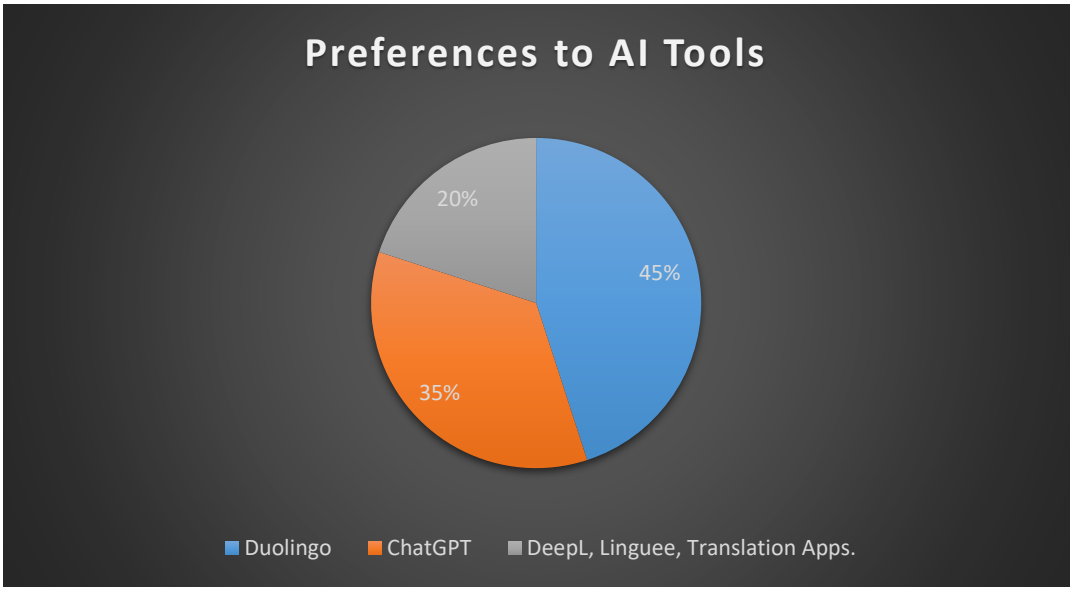

Fig. 2. Respondents' preferences toward AI Tools.

Table 1 below presents the levels of preferences, concerns, and effectiveness of these tools amongst L2 learners. The values of preference levels are given in percentage, whereas the values for concerns and effectiveness are ranged on a scale from 1-10, with 10 being the highest level.

Table 1
Attitudes toward AI tools.

Tool	Preference (%)	Concerns (1-10)	Effectiveness (1-10)
Duolingo	45	5	7
ChatGPT	35	3	8
Other tools	20	7	6

3.3 Motivational Levels

In addition to evaluating familiarity levels of AI tools and learner attitudes towards these tools, learners were asked to illustrate how using these tools affected their motivation to learn a second language. Figure 3 presents the impact on motivational levels using AI tools.

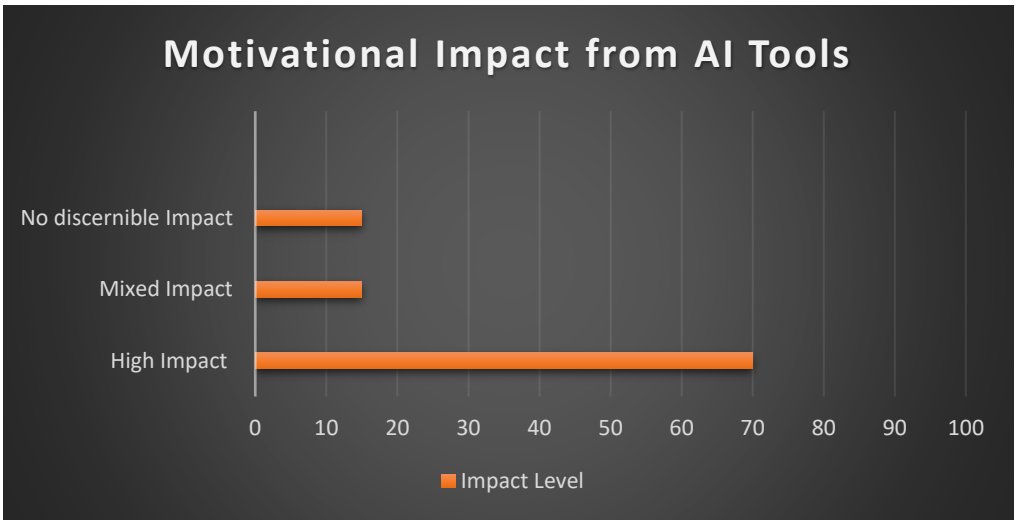

Fig. 3. Impact on motivational levels using AI tools.

A significant majority (70%) reported a positive impact on motivation resulting from the incorporation of AI tools into language learning. Users highlighted the accessibility and immediate

feedback provided by these tools as key contributors to their enhanced motivation in language learning, as learner 13 remarked: “Knowing that help is readily available whenever you need it makes you feel more relaxed and willing to learn”.

Additionally, the positive reinforcement mechanisms embedded in some platforms, exemplified by Duolingo streaks, were noted for their role in sustaining learners' motivation over time. However, approximately 15% of the surveyed individuals expressed a mixed impact on motivation. Their responses indicated a delicate balance between short-term motivation and long-term effectiveness. While acknowledging the dopamine boost facilitated by AI tools, users in this category expressed reservations about the tools fully replacing the irreplaceable element of human interaction in the language learning process. Some observations were that the mixed impact category revealed a nuanced perspective among users, recognizing the benefits of AI tools while highlighting concerns about their long-term efficacy.

Learner 14: “It increases my motivation as it's a short-term dopamine boost (from keeping a Duolingo streak for example) but for long term learning, I prefer being taught by a teacher or teaching myself through books/articles”.

Learner 15: “I appreciate the independence you have with using AI-powered applications as you can set your own pace. However, I do believe the interaction that comes from human educators to be irreplaceable. I think they are better able to teach, assist and assess you in a more thorough manner. With AI-powered applications, despite the surplus of information they have, I still find them very limited in that regard”.

Furthermore, a notable portion, constituting 15% of respondents, reported no discernible impact on motivation from the integration of AI tools in language learning. Users in this category emphasized the importance of authentic, emotionally nuanced learning experiences, expressing

concerns about potential risks associated with deterring students from traditional language learning methods.

Learner 16: "It has not increased my motivation as only native speakers can provide that authentic learning experience when it comes to languages. Machines, though more advanced than ever, still lack emotional and contextual awareness (there are different vocabulary it's that mean the same thing but are used in different contexts: example- 'because of' in French. 'Grâce à' and 'au cause de' both translate to the phrase but one is used with a positive connotation while the other, negative".

Learner 17 – "It has not increased my motivation to learn because it is not as flexible, knowledgeable, or engaging as human educators. It is just the same thing over and over. Also, the feedback provided by AI is not as elaborate as human educators".

These responses emphasize the significance of maintaining authentic learning experiences, suggesting that AI tools may not fully meet the diverse motivational needs of every learner. However, a significant 85% of the participants agreed that due to the availability and readiness of AI, paired with its accuracy and dopamine effects, their motivation to learn a second language increased temporarily.

3.4 Improvement Patterns from Using AI Tools

To evaluate the degree of improvement in learners' L2 acquisition process facilitated by AI, participants were asked to share their experiences and observations. Table 2 below shows participants' improvement patterns from using AI tools.

Table 2
Percentages of Improvement after using AI tools in language learning.

	Significant Improvement	**Some Improvement**	**No Improvement**
Percentage of Users	25%	60%	15%

The surveyed users presented varied perceptions regarding the improvement achieved through the utilization of AI tools in language learning. Approximately 25% reported experiencing significant improvement, attributing this success to personalized learning recommendations and real-time feedback. Notably, the positive impact extended to oral communication, written skills, and overall language proficiency, as mentioned by learners 1 and 2.

Learner 1: "My speaking and writing skills in particular improved as a result of my use of these ai powered applications. With respect to my speaking skills, I saw a marked improvement in fluency, accuracy, and coherence. In terms of my writing skills, I saw marked improvement in the term of how expansive my writing became and how easy it was for me to form sentence structures."

Learner 2: "Oral communication and written".

Learner 3: "Vocabulary, expression of terms".

The majority, constituting 60%, reported some improvement, with incremental progress observed in vocabulary building, pronunciation, and grammar correction. Learners highlighted the convenience and accessibility of AI tools, facilitating consistent practice, as learners 4 and 5 remarked, "Grammar skills especially with regards to knowledge of vocabulary" / "Improvements

in conversation practice, more accuracy in reproducing native accents, more accuracy in corrections".

15% reported no improvement and expressed concerns about the limitations of AI tools, particularly in language use, as learner 6 said, "AI is very beneficial but it's important to not abuse it because not all the time it is correct so it's good to use it as a guidance and not depend on it".

These diverse improvement perceptions underscore the multifaceted role of AI tools in catering to distinct learning needs and preferences.

3.5 Future Outlook

A diverse outlook of AI in language learning emerged from surveyed individuals, with 45% expressing a positive anticipation of increased integration in educational settings and enthusiasm for potential advancements in language learning technology. This was expressed by learners 7, 8, and 9.

Learner 7: "AI can be incorporated into the classroom environment, not only to aid students' comprehension of the various aspects of a language but also to cater to the needs of those with disabilities in a foreign language classroom environment. AI provides a range of possibility to explore a language and makes learning not only easier but also fun."

Learner 8: "I see the role of AI in second language learning becoming greater and more influential in the learning outcomes of students mainly due to the fact that it can allow students to target certain weaknesses they may have and learn at a pace that is appropriate for them."

Learner 9: "I think in general a lot of students are turning to AI for general assistance in their work. With regards to language learning specifically, I can see students using it to help with research, general language skills like reading, writing and grammar."

However, 35% expressed concerns about potential over-reliance on AI, emphasizing the need to maintain a balance with traditional language learning methods, as indicated by learner 10, “It can only be beneficial to an extent. I personally believe that only persons can help with actual communication of their native language to the fullest extent.”

An additional 20% adopted a neutral or "It Depends" stance, awaiting further evolution of AI tools and recognizing both benefits and potential drawbacks, as highlighted by learners 11 and 12. *Learner 11:* “I see the role of AI in second language learning becoming greater and more influential in the learning outcomes of students mainly due to the fact that it can allow students to target certain weaknesses they may have and learn at a pace that is appropriate for them.”
Learner 12: “It may be a crucial part in a foreign language student's development by reinforcing concepts taught in class”.

These findings offer a comprehensive understanding of users' experiences, preferences, and future expectations related to language learning tools and AI applications.

The survey data offers varied perspectives on users' awareness and interactions with language learning tools and AI applications. Familiarity levels vary, underscoring the importance of tailored approaches for different user experiences. While acknowledging the significant contributions of AI tools to motivation and improvement, users express a desire for ongoing enhancements and a balanced approach. Some key insights include diverse preferences, where Duolingo, DeepL and ChatGPT emerge as popular choices, alongside the use of other translation tools for specific tasks. Learners acknowledge the positive short-term impact on motivation, but they express lingering concerns regarding potential long-term effects on traditional language learning methods. Additionally, users report incremental improvement in various language skills, highlighting the crucial role of personalized learning recommendations and real-time feedback.

Learners anticipate increased AI integration in education but display concerns about over-reliance on these.

CHAPTER 4

DISCUSSION OF FINDINGS

Artificial Intelligence has impacted the world in various sectors, including the education sector. The purpose of this research was to evaluate the awareness, attitudes, and the impact of AI on motivation and engagement among third-year Spanish and French L2 learners at the University of the West Indies regarding AI integration in language learning. The gathered data reveal varied results. Participants agree that using AI powered tools to assist them in their language learning process has a positive impact on their skills, but also contested that their preferred choice for language learning remains with traditional teaching methods. Notably, research results from the literature review corroborates with the results from the survey. The following discussion will elaborate more on these findings, examining user awareness, attitudes, preferences, and the impact of AI on learner motivation, using the research questions as a guide for the discussion.

Research Question 1: To what extent are Year 3 Spanish and French L2 learners aware of the presence and use of AI in their language learning process at the University of the West Indies?

The survey findings regarding awareness levels and perceptions of AI tools in L2 learning offer valuable insights applicable to the Caribbean context, particularly within the University of the West Indies (UWI). As Davis and Mageira et al. highlighted in their studies, learner preferences and attitudes towards AI integration are crucial considerations in language education (58, 13). This holds true for the Caribbean, where cultural values and educational norms may influence how AI tools are perceived and utilized in language learning environments. In the Caribbean region, where linguistic diversity is celebrated, there may be a heightened appreciation for the role of human interaction in language learning, as opposed to relying solely on AI technology. This sentiment is reflected in the survey findings, where concerns were expressed about the potential diminishing of

the learning experience through the substitution of human partners with AI tools. Moreover, the relatively low positive attitude towards specific AI chatbots, as observed in Mageira et al.'s study, underscores the importance of understanding and addressing learner preferences within the Caribbean context. At UWI, where a diverse student body engages in language learning across various disciplines, it becomes required to include AI-integrated language learning approaches to accommodate the unique needs and preferences of learners. Considering the technological landscape of the Caribbean, where access to advanced AI tools may vary across countries and regions, it becomes essential to ensure equitable access to AI-integrated language learning resources. This may involve initiatives to enhance digital infrastructure and promote technological literacy among students and educators at UWI.

Research Question 2: What are the perceptions and attitudes of these L2 learners towards AI agents in second language learning contexts?

When it comes to perceptions about preferences for AI or human educators in the L2 learning processes, the findings are insightful because despite the wide acceptance of the different AI tools, learners still favoured human interaction. Most respondents stated that it is only through human interaction can they learn their second language natively, meaning that they need someone to speak in the same manner, speed, and tone as a native Spanish/French speaker, also to explain in-depth complex terms. Therefore, the indication that students require a human-like personality rather than an automated response machine, a result simultaneous with that of Fischer et.al (6). Also, Ling and Hanawald's study concluded that the intellectual capacity of humans surpasses that of AI, and it cannot be replaced (9). When comparing these findings to the broader context of attitudes towards AI in language learning, the study by Glenn Davis also reveals a prevalent belief that substituting human partners with current conversational AI tools would diminish the learning

experience, shared by 75.7% of their respondents, whereas only 9.3% believed that the replacement would lead to more learning (58). Mageira et al.'s investigation into the usage of AsasaraBots in L2 learning underscores a relatively low positive attitude toward this educational AI chatbot (12). These collective findings and conclusions highlight the importance of understanding and addressing learner preferences and attitudes for the effective integration of AI tools in language education, emphasizing concerns about substituting human interaction with current conversational AI and the reception of specific AI tools like AsasaraBots in the learning process.

Research Question 3: How does user awareness of AI agents and their capabilities impact the motivation and engagement of L2 learners in language learning activities?

A substantial 70% of learners in the present study reported elevated motivational levels attributed to factors such as high accessibility, immediate feedback, and an increased dopamine boost – characteristics deemed instrumental in enhancing motivation. Positive reinforcement mechanisms, exemplified by Duolingo's "streaks", were identified as key in sustaining learners' motivation over time. However, approximately 15% expressed a mixed impact, acknowledging short-term motivation with these tools while underscoring the irreplaceable role of human interaction in the long term. Another 15% reported no discernible impact, underscoring the importance of maintaining authentic learning experiences. These perspectives among users not only demonstrate an awareness of the benefits and drawbacks of AI tools on motivation but also emphasize the indispensable role of human educators in language learning. Corroborating these findings, research by Fischer Kirsten et al. reveals that language learners receiving instructions from a robot employing a highly charismatic speaking style showed a better response to motivated learning compared to when the robot spoke in a not-so-charismatic style (6). This sentiment is

echoed in the survey as respondents favoured native-like interactions over automated and programmed ones as underscored in Rawashdeh's study. Therefore, while AI-generated tools showcase the potential to significantly enhance motivation in language learning through factors like accessibility and immediate feedback, users' nuanced perspectives also underscore the irreplaceable role of human interaction, emphasizing the need for a balanced approach that leverages both AI technology and human educators to optimize language learning experiences.

Looking ahead, a diverse outlook of AI in language learning emerged, with 45% expressing optimism of increased integration and enthusiasm for potential advancements. However, 35% expressed concerns about potential over-reliance, emphasizing the need to maintain a balance with traditional methods. An additional 20% adopted a neutral stance, awaiting further evolution of AI tools. These findings offer a comprehensive understanding of users' experiences, preferences, and future expectations towards language learning tools and AI applications.

In conclusion, the findings from this research provide a deeper understanding of AI integration in language learning among third-year Spanish and French L2 learners. Despite high familiarity with AI tools, learners exhibit a preference for traditional teaching methods, emphasizing the unique value of human interaction. The significant 70% reporting elevated motivation with AI highlights its potential benefits, in terms of accessibility and immediate feedback. However, the acknowledgment of a *mixed impact* (15%) and *no discernible impact* (15%) underscores the importance of maintaining authentic learning experiences and the irreplaceable role of human educators in long term. Looking ahead, the diverse outlook on increased AI integration (45%) and concerns about over-reliance (35%) indicate the need for a balanced approach. This research underscores the imperative of understanding learner preferences, revealing the delicate balance between AI and traditional methods, and recognizing the

indispensable role of human educators in enriching language learning experiences. As the educational landscape evolves, acknowledging and addressing these findings is crucial for fostering effective and engaging language learning environments that harness the benefits of AI while upholding the richness of human interaction.

CHAPTER 5

CONCLUSION

In conclusion, the findings of this study provide valuable insights into the awareness, perceptions, and motivation of L2 learners using AI in their L2 learning process. Users indicate that although AI is beneficial to aid in vocabulary acquisition, language practice and personalized feedback, the need for human educators persists and is deemed crucial for the L2 learning success.

These findings are consistent with previous research on the different impacts that AI has on students. They suggest that although familiarity levels are high and students interact with AI to aid in their L2 learning process, learner motivation is truly impacted when there is a human educator involved. Given the predominance of artificial intelligence in society, these findings have important information for both students and language educators.

However, it is important to acknowledge the limitations of this study. One potential limitation is the relatively small sample size, also the study relied solely on third-year Spanish and French students. This limits the data that could be gathered from different foreign language learners at various levels.

5.1 Recommendations for Future Research

There are several potential avenues for future research such as to further investigate the long-term effects of AI tools on learner motivation and to explore the relationship between specific AI features (e.g., immediate feedback, gamification) and sustained motivation over time. Additionally, future studies could delve deeper into learners' reasons for preferring human educators despite regular use of AI tools, and to investigate how the personality and characteristics of AI interfaces impact learner preferences.

Overall, the findings of this study contribute to a growing body of research on AI integration in L2 learners' journey. As such, these findings have important implications for students, educators and policymakers interested in integrating AI in the L2 classroom.

WORKS CITED

Akgun, Selin, and Christine Greenhow. “Artificial Intelligence in Education: Addressing Ethical Challenges in K-12 Settings.” *AI and Ethics*, vol. 2, no. 3, Sept. 2021, www.ncbi.nlm.nih.gov/pmc/articles/PMC8455229/.

Ali, Jamal Kaid Mohammed, et al. “Impact of ChatGPT on Learning Motivation:Teachers and Students’ Voices.” *Research Gate*, Journal of English Studies in Arabia Felix, 8 Mar. 2023, www.researchgate.net/publication/369062472_Impact_of_ChatGPT_on_Learning_Motivation_Teachers_and_Students’_Voices#fullTextFileContent.

Anyoha, Rockwell. “The History of Artificial Intelligence.” *Science in the News*, Harvard University, 28 Aug. 2017, sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/.

Cardona, Miguel A., et al. *Artificial Intelligence and the Future of Teaching and Learning Insights and Recommendations*. Office of Educational Technology, May 2023, www2.ed.gov/documents/ai-report/ai-report.pdf.

Cartwright, Mark. “Paper in Ancient China.” *World History Encyclopedia*, 15 Sept. 2017, www.worldhistory.org/article/1120/paper-in-ancient-china/.

Davis, Glenn. “Humanlike Conversational Artificial Intelligence Agents for Foreign or Second Language Learning: User Perceptions, Expectations, and Interactions with Agents - ProQuest.” *Www.proquest.com*, June 2022, www.proquest.com/docview/2723858200?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses. Accessed 7 Dec. 2023.

Fernandes, Luis. “The Abacus: A Brief History.” *Www.ecb.torontomu.ca*, 11 Jan. 2015, www.ecb.torontomu.ca/~elf/abacus/history.html.

Fischer, Kirstin, et al. “Robots for Foreign Language Learning: Speaking Style Influences Student Performance.” *Frontiers in Robotics and AI*, vol. 8, Sept. 2021, https://doi.org/10.3389/frobt.2021.680509. Accessed 10 Oct. 2022.

Fu, Shixuan, et al. “The Affordances of AI-Enabled Automatic Scoring Applications on Learners’ Continuous Learning Intention: An Empirical Study in China.” *British Journal of Educational Technology*, vol. 51, no. 5, July 2020, pp. 1674–92, https://doi.org/10.1111/bjet.12995.

Godwin-Jones, Robert. *In a World of SMART Technology, Why Learn Another Language?* Educational Technology & Society, 2019, pp. 4–13.

Gold, Edem. “The History of Artificial Intelligence from the 1950s to Today.” *FreeCodeCamp.org*, 10 Apr. 2023, www.freecodecamp.org/news/the-history-of-ai/.

Guerra, Abel. “The Future Benefits of Artificial Intelligence for Students.” *Urbeuniversity.edu*, 6 July 2023, urbeuniversity.edu/blog/the-future-benefits-of-artificial-intelligence-for-students.

Hanawald, Sarah. “AI Won’t Replace Teachers—but It Could Help Them | ERB.” *ERBLearn*, 12 Sept. 2023, www.erblearn.org/blog/ai-wont-replace-teacher-intelligence/#:~:text=Yes%2C%20generative%20AI%20can%20be.

Hanımoğlu, Egemen. “The Impact Technology Has Had on High School Education over the Years.” *World Journal of Education*, vol. 8, no. 6, Dec. 2018, p. 96, https://doi.org/10.5430/wje.v8n6p96.

IBM. “What Is a Chatbot? | IBM.” *Www.ibm.com*, www.ibm.com/topics/chatbots.

Ling, Wei. “Artificial Intelligence in Language Instruction: Impact on English Learning Achievement, L2 Motivation, and Self-Regulated Learning.” *Frontiers in Psychology*, vol. 14, Frontiers Media, Nov. 2023, https://doi.org/10.3389/fpsyg.2023.1261955.

Mageira, Kleopatra, et al. “Educational AI Chatbots for Content and Language Integrated Learning.” *Applied Sciences*, vol. 12, no. 7, Mar. 2022, p. 3239, https://doi.org/10.3390/app12073239.

McCarthy, J., et al. “Artificial Intelligence (AI) Coined at Dartmouth | Dartmouth.” *Home.dartmouth.edu*, home.dartmouth.edu/about/artificial-intelligence-ai-coined-dartmouth#:~:text=The%20Dartmouth%20Summer%20Research%20Project.

Mcleod, Saul. “Vygotsky’s Sociocultural Theory of Cognitive Development.” *Www.simplypsychology.org*, 2007, www.simplypsychology.org/vygotsky.html.

Muttappallymyalil, Jayakumary, et al. “Evolution of Technology in Teaching: Blackboard and beyond in Medical Education.” *Nepal Journal of Epidemiology*, vol. 6, no. 3, Oct. 2016, pp. 588–92, https://doi.org/10.3126/nje.v6i3.15870. Accessed 20 Feb. 2020.

Oke Oluwafemi Ayotunde, et al. “The Impact of Artificial Intelligence in Foreign Language Learning Using Learning Management Systems: A Systematic Literature Review.” *Information Technologies and Learning Tools*, vol. 95, no. 3, Institute for Digitalisation of Education of the NAES of Ukraine, June 2023, pp. 215–28, https://doi.org/10.33407/itlt.v95i3.5233. Accessed 4 Nov. 2023.

Rashid, Md Harun Ar. “The Use of Technology in the Classroom.” *Library & Information Management*, 24 Sept. 2023, limbd.org/the-use-of-technology-in-the-classroom/.

Rawashdeh, Al. “Advantages and Disadvantages of Using E-Learning in University Education: Analyzing Students’ Perspectives.” *The Electronic Journal of E-Learning*, vol. 19, no. 2, 2021, pp. 107–17, files.eric.ed.gov/fulltext/EJ1296879.pdf.

Ro, Christine. “Students Switch to AI to Learn Languages.” *BBC News*, BBC News, 22 June 2023, www.bbc.com/news/business-65849104.

Seo, Kyoungwon, et al. “The Impact of Artificial Intelligence on Learner–Instructor Interaction in Online Learning.” *International Journal of Educational Technology in Higher Education*, vol. 18, no. 1, Oct. 2021, https://doi.org/10.1186/s41239-021-00292-9.

Shabiralyani, Ghulam, et al. “Impact of Visual Aids in Enhancing the Learning Process Case Research.” *Journal of Education and Practice*, vol. 6, no. 19, 2015, files.eric.ed.gov/fulltext/EJ1079541.pdf.

Turner, Ash. “How Many Smartphones Are in the World?” *BankMyCell*, BankMyCell, 2 May 2016, www.bankmycell.com/blog/how-many-phones-are-in-the-world.

Zou, Bin, et al. “Supporting Speaking Practice by Social Network-Based Interaction in Artificial Intelligence (AI)-Assisted Language Learning.” *Sustainability*, vol. 15, no. 4, MDPI, Feb. 2023, pp. 2872–72, https://doi.org/10.3390/su15042872.

APPENDIX A – QUESTIONNAIRE

AI and L2 Learners - A Study of Artificial Intelligence in Second Language Learning
- User Awareness and Interactions with Agents at the U.W.I.

My name is Shania Sammy and I am conducting a Caribbean Studies research for my final
year project based on how AI (Artificial Intelligence) impacts L2 learning (second language learning) at the University of the West Indies, amongst year 3 Spanish majors and French majors. This research focuses in depth on **user awareness and interaction** with AI agents.

Please note this form is CONFIDENTIAL, so please be truthful in all your responses. Thank you.

* Indicates required question

1. Please indicate your age. *

Mark only one oval.

- ◯ Under 18
- ◯ 18-24
- ◯ 25-34
- ◯ 35-44

2. What is your major? *

Mark only one oval.

- ◯ Spanish
- ◯ French
- ◯ Spanish and French double major

General AI Awareness in Second Language Learning

3. How familiar are you with the term "Artificial Intelligence (AI)" in second language learning? *

Mark only one oval.

- ◯ Very familiar
- ◯ Somewhat familar
- ◯ Not familiar at all

4. Have you personally used AI-based tools or applications for second language learning? *

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ Not sure

5. If yes, please state the name of the tool and what you used it for.

_____

_____

_____

_____

_____

6. What is your overall attitude toward AI technologies? *

Mark only one oval.

- ◯ Positive
- ◯ Neutral
- ◯ Negative
- ◯ I don't have an opinion

AI Interactions

7. Have you ever interacted with AI-powered language learning applications or chatbots for tasks such as vocabulary practice or language exercises? e.g., Duolingo, Babble, ChatGPT, Siri, Alexa, etc.? *

Mark only one oval.

- Yes
- No
- Sometimes

8. If yes, please mention the tools and describe your experience with each of them.

_____

_____

_____

_____

_____

9. Does your motivation to learn the second language increase with using these AI-powered applications?

Mark only one oval.

- Yes
- No
- Maybe
- I don't know

10. Do you feel that your motivation to learn the second language increase with using these AI-powered applications, as opposed to human educators?

Mark only one oval.

- Yes
- No
- Maybe

11. Please elaborate more on the question above, responding to how it has or has not increased your motivation to learn. *

_____

_____

_____

_____

_____

Perceptions and Impacts of AI in Second Language Learning

12. In your opinion, how can AI enhance the process of learning a second language? *

Check all that apply.

- [ ] Provide personalized learning recommendations
- [ ] Offer real-time language practice and feedback
- [ ] Facilitate interactive language conversations
- [ ] Other (please specify)

13. Have you noticed improvements in your second language learning outcomes due to the use of AI-powered language learning tools?

Mark only one oval.

- ◯ Yes, significant improvement
- ◯ Yes, some improvement
- ◯ No improvement
- ◯ Not sure

14. Explain what skills improved in your second language learning process due to the use of AI-powered language learning tools.

_____

_____

_____

_____

_____

Preferences and Usage Patterns

15. How often do you use AI-powered language learning tools or applications? *

Mark only one oval.

- ◯ Daily
- ◯ Weekly
- ◯ Monthly
- ◯ Rarely
- ◯ Never

16. What specific aspects of AI-driven language learning tools do you find most beneficial? (Select all that apply) *

Check all that apply.

- [ ] Pronunciation practice
- [ ] Vocabulary building
- [ ] Grammar correction
- [ ] Conversation practice
- [ ] Cultural insights
- [ ] Other (please specify)

Future of AI in Second Language Learning

17. How do you foresee the role of AI in second language learning evolving in the next few years? *

_____

_____

_____

_____

_____

18. Would you be willing to use AI for more advanced language learning tasks, such as essay writing or complex language exercises, in the future? *

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ It depends on the task
- ◯

Additional Information

19. Please leave here any additional thoughts, comments, information that you may like to share with regards to using AI in L2 learning. Please note all responses are confidential, therefore respond with honesty and integrity.

Additional thoughts, comments, feedback with regards to using AI in L2 learning.

_____

_____

_____

_____

A